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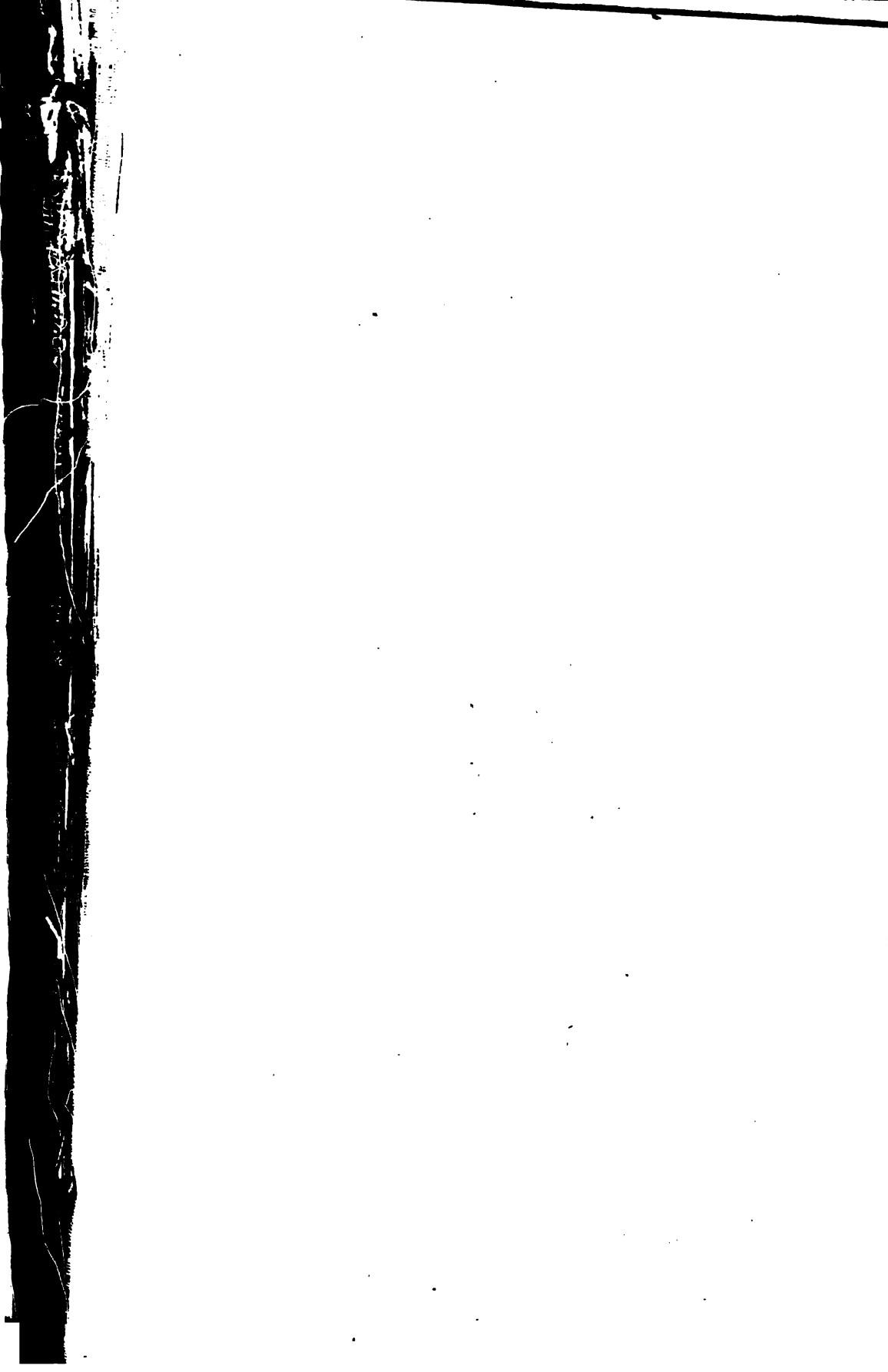
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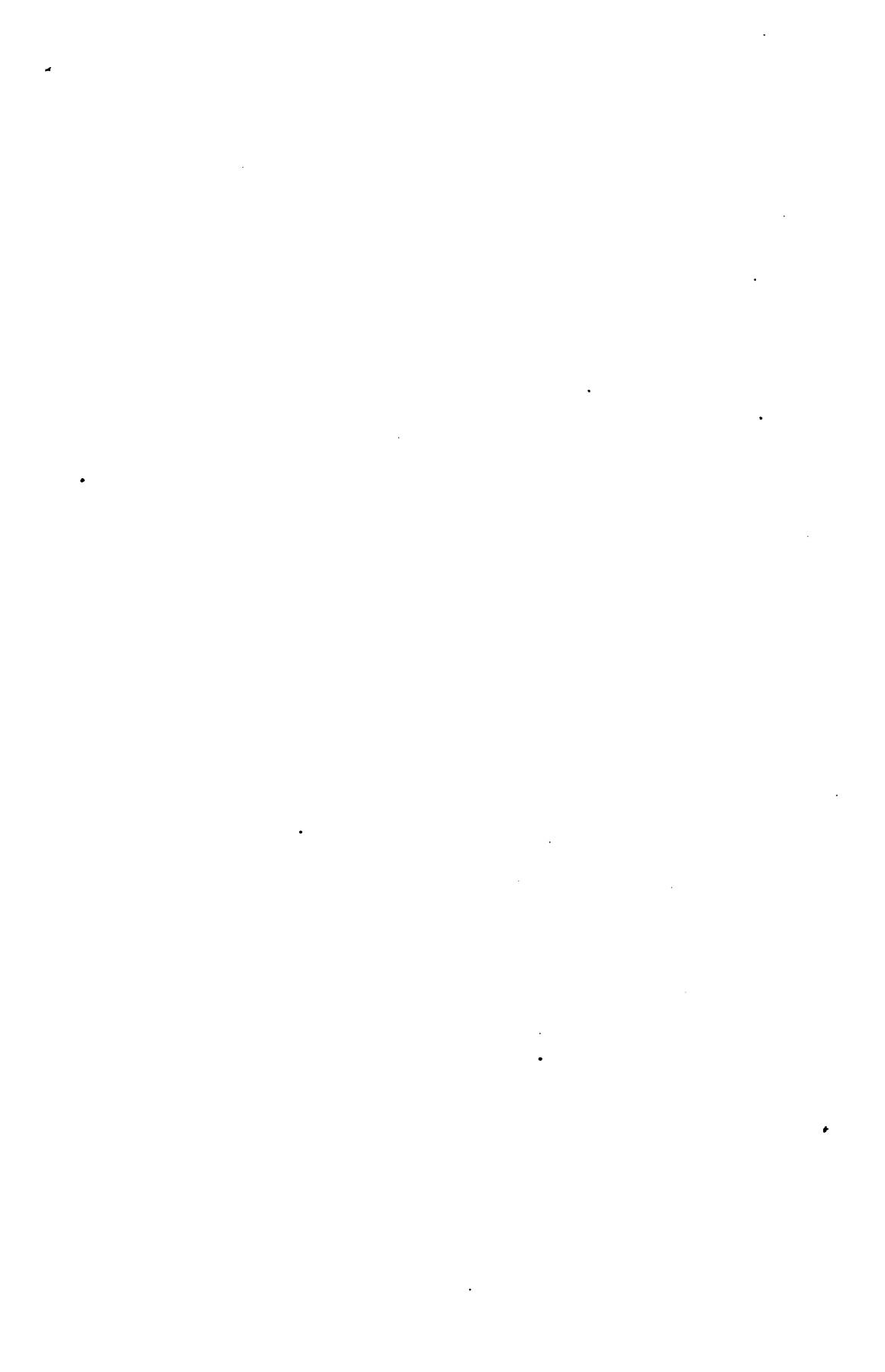


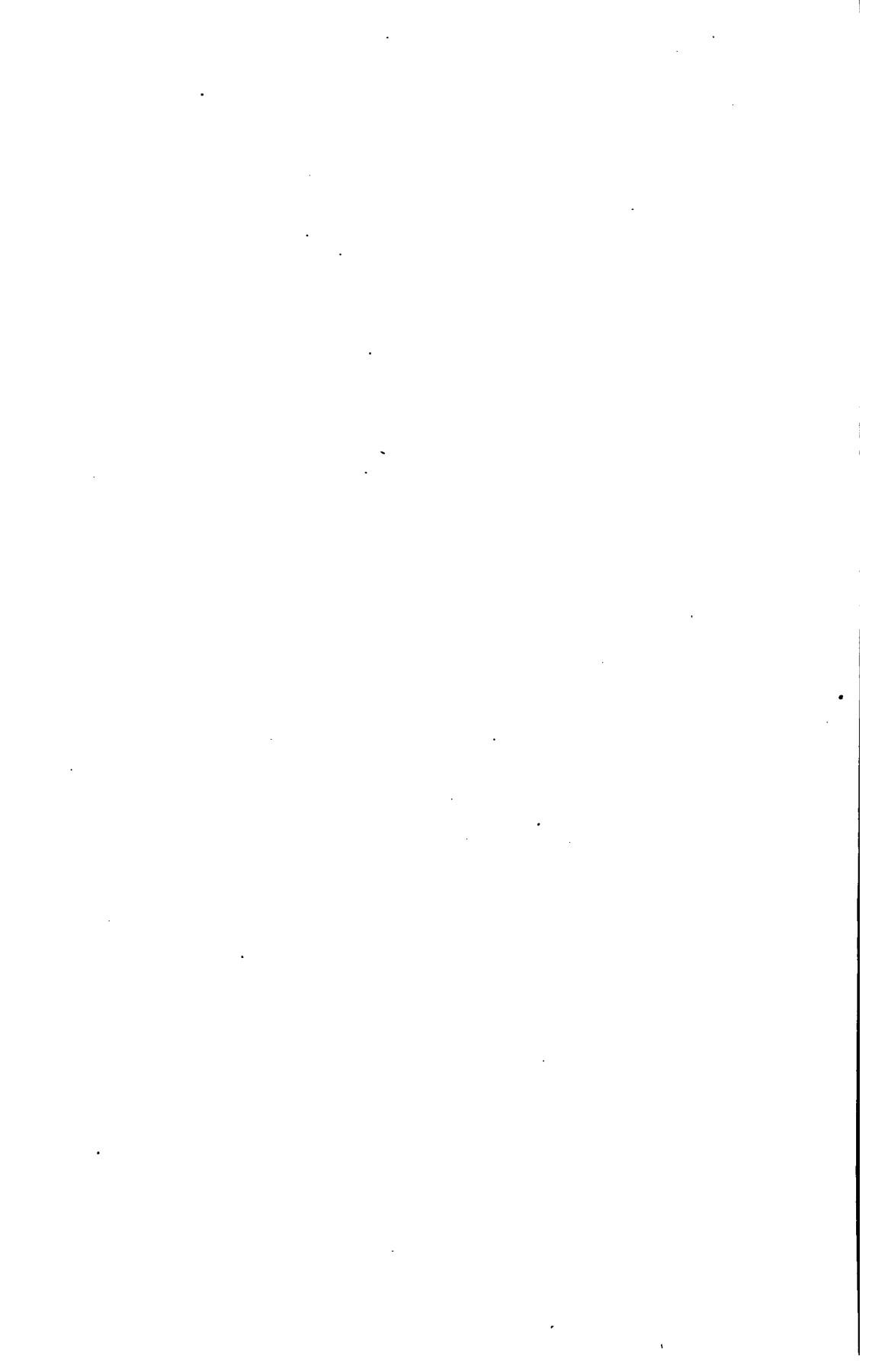
Arthur Riddle

March 8th 1897

28638







PATENT CASES

DETERMINED IN THE

SUPREME COURT OF THE UNITED STATES,

INCLUDING

COPYRIGHT AND TRADE-MARK CASES;

AND A
SELECTED BIBLIOGRAPHY.

TABLE OF ALL AMERICAN PATENT, COPYRIGHT, AND
TRADE-MARK CASES, WHICH HAVE BEEN CITED,
AFFIRMED, OR REVERSED.

BY

CHARLES SIDNEY WHITMAN,

AUTHOR OF "PATENT LAWS AND PRACTICE OF OBTAINING LETTERS PATENT FOR INVENTIONS."

"The doctrine of Patents may truly be said to constitute the metaphysics
of the law."—STORY.

1 Black-20 Wallace.

VOL. II.

WASHINGTON, D. C.

W. H. & O. H. MORRISON,
LAW BOOKSELLERS AND PUBLISHERS.

1875.

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PREFACE.

THIS VOLUME includes all cases relating to Letters Patent for Inventions, Copyrights, and Trade-marks which have been decided in the Supreme Court of the United States since the December Term of 1860. It also contains a Table of all American Patent, Copyright, and Trade-mark cases which have been cited, affirmed, approved, explained, doubted, disapproved, overruled, or reversed in the Reports of the Federal and State Courts. In preparing this Table the author has endeavored to supply a need which has long been felt, and he feels confident that the value of his labors will be appreciated by his professional brethren, who are aware of the difficulties and doubts which arise in examining the adjudged cases, and are ready to avail themselves of all means within their reach in reconciling conflicting decisions and settling doubtful questions.

A volume containing all decisions of the Court made prior to the December Term of 1861, and now to be found scattered through the sixty-four volumes comprising the Reports of Dallas, Cranch, Wheaton, Peters, and Howard, is in the course of preparation.

CHARLES SIDNEY WHITMAN.

915 G STREET, WASHINGTON, D. C., *August 15, 1875.*

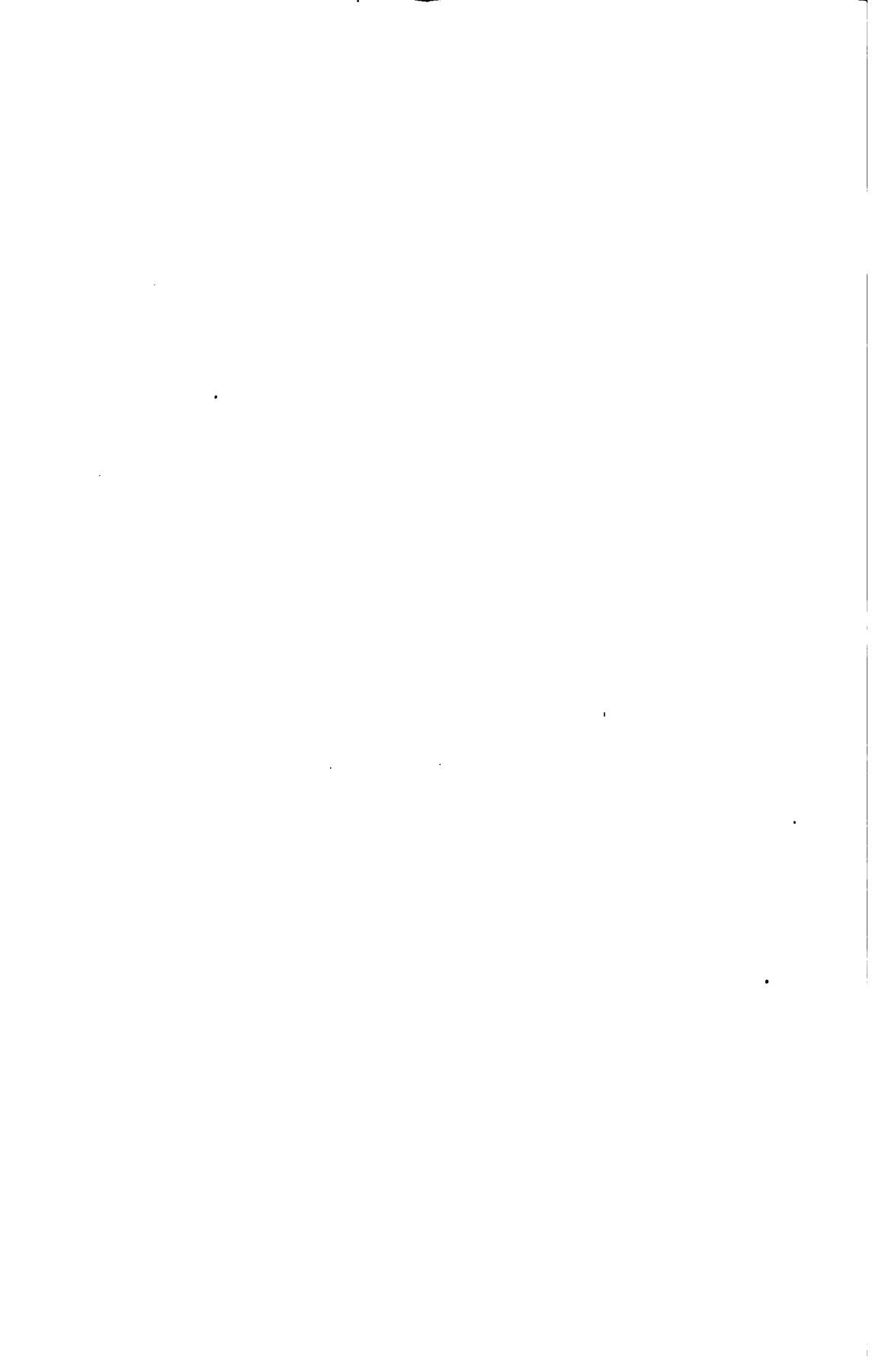
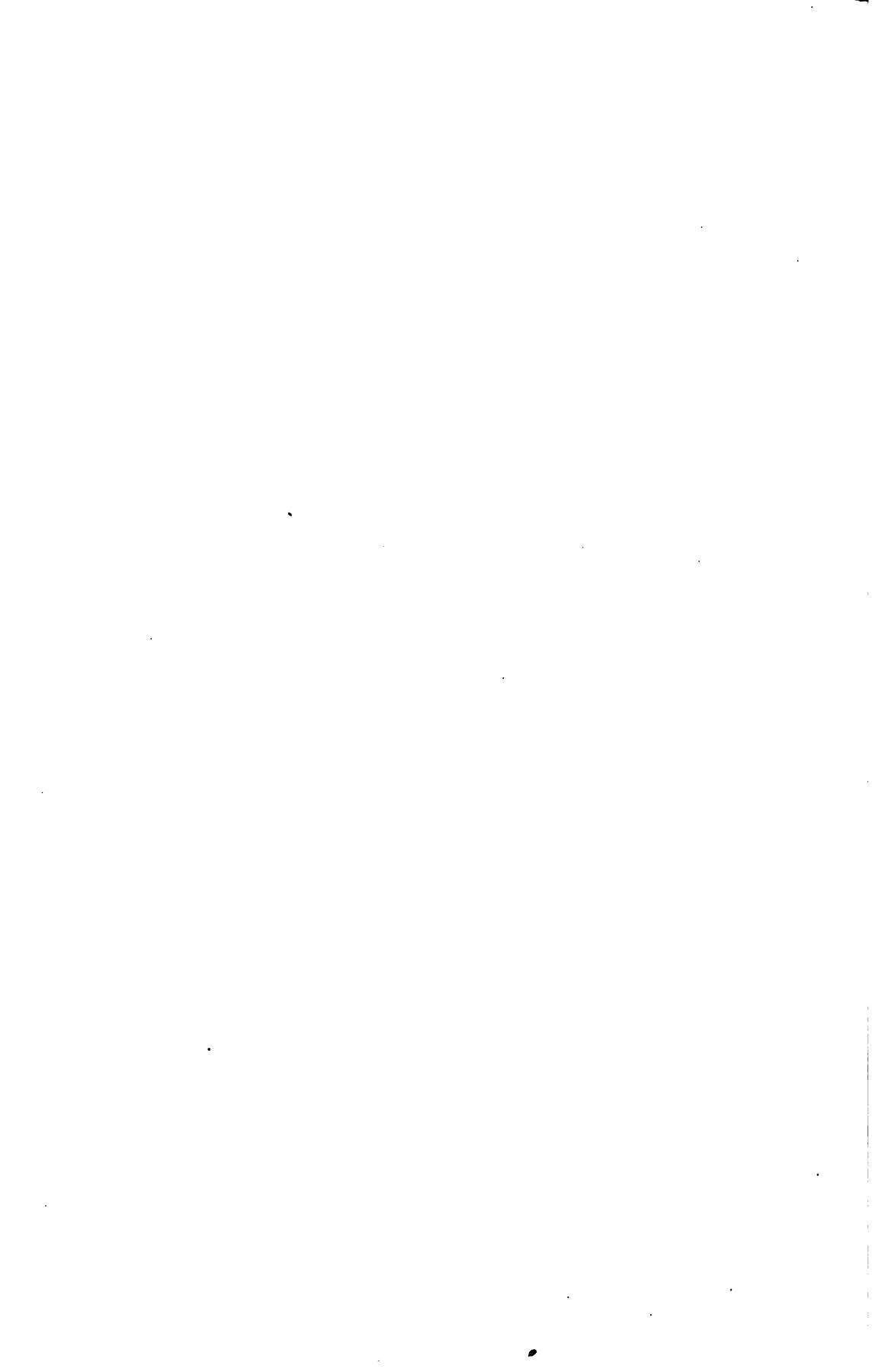


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PATENT CASES
DECIDED IN THE
SUPREME COURT
OF
THE UNITED STATES.

MOFFITT v. GARR ET AL.

(1 Black, 273.)

1. The surrender of a patent under the 13th section of the act of July 4, 1836, in judgment of law, extinguishes it—is a legal cancellation of it, and no right can afterwards be asserted upon it.
2. Suits pending for an infringement of such a patent fall with its surrender, because the foundation upon which they were commenced no longer exists.
3. But moneys recovered or paid under a patent previous to its surrender cannot be recovered back afterwards.

ERROR to the Circuit Court of the United States for the Southern District of Ohio.

The plaintiff in error, who was also plaintiff below, filed a declaration in case against defendants in error, for the infringement of letters patent of the United States, granted to him November 30, 1852, for an improvement in grain separators. This declaration was filed March 22d, 1859. On the 25th of October following, one of the defendants filed the following plea: "And now comes the said John M. Garr and says that the said John R. Moffitt ought not further to maintain this action against him; because, he says, that since the commencement thereof and before the 17th day of May, 1859, to wit, on the day of , the said John R. Moffitt surrendered to the United States the patent before that time issued to him, and for the alleged infringement of which this suit is brought, and this he is ready to verify. Wherefore," &c. To this plea the plaintiff demurred, and the court overruled the demurrer Judgment for defendant. The plaintiff took this writ of error.

Argument for the plaintiff in error.

Mr. Lee and Mr. Fisher, of Ohio, for plaintiff in error: There may be a surrender of letters patent which is not made for the purpose of reissue under the 13th section of the act of July 4, 1836. The plea does not aver that the plaintiff's patent was surrendered under, or by virtue of, the 13th section of the patent act; nor does it aver that it was surrendered for the purpose of obtaining a reissue; or that it was surrendered because of a defective or insufficient description or specification; or because the claim was too broad; or because the patent was from any cause void or voidable; nor even that the patent was canceled.

The question of the right of a patentee to surrender his patent, before the act of 1836, and independently of any statute authorizing him to do so, was fully considered in the discussion of the case of *Grant v. Raymond*, 6 Peters, 218; but neither the court, nor either of the distinguished counscl, seemed to doubt, for a moment, that he possessed such power. *Batten v. Taggart*, 17 How., 74. If the right to make such a surrender exists independently of any statute, the making of the surrender does not imply or involve any statutory or other defect in the patent. And where a patent has been so surrendered or abandoned, an action may still be maintained for infringements committed before the surrender or abandonment. If the patentee surrenders his patent at the end of six years, it is the same as if it had been originally granted to him for six years, and that, for violations of his exclusive privileges committed during those six years, his remedy is as complete as if the patent had stood to the end of his term. It would seem as if this proposition did not admit of doubt or argument. If the surrender of the patent vacates it from the first, then the patentee has been a trespasser from the beginning. He may have been the first and original inventor of a useful improvement; his patent may have been regularly issued; it may have been tested and declared valid in the courts of last resort; and his right to enjoy his monopoly to the end of the full term may have been indisputable. Yet, if he surrenders the latter half of that monopoly to the people, he renders the first half void. He ought to be compelled to refund every penny he had received as patentee, whether peaceably or by the judgment of a competent tribunal. This would be monstrous. But, if he has any rights under the first half of the grant, he is entitled to full rights. If he is entitled to keep the pay received from those who have used and paid, he is also entitled to demand and recover his pay from those who have used and not paid. He might have brought and maintained such an action before the surrender. Why not as well afterwards, when suits may be brought

Argument for the plaintiff in error.

any time within six years after the expiration of a patent for infringements committed before? The right of the patentee, we insist, is not divisible. That portion of it which is in possession is no more legal than that which remains in action.

The application of these principles to the present case is obvious.

The plea avers a simple surrender of the patent, made two months after an action had been actually brought to recover damages for a previous infringement. It does not aver cancellation or reissue. The court, by overruling the demurrer, held such a plea to be a bar to such an action. We think the error obvious, upon the principles above set forth.

But if this surrender were, in fact, made under the authority of the 13th section of the act of July 4, 1836, and only by virtue of that section, then we maintain: A surrender of a patent for correction and reissue, by virtue of the statute, does not render the patent void *ab initio*. If the patentee still chooses to risk a suit upon the original patent, he may recover upon it for infringements committed before it was surrendered. In support of this proposition we submit the considerations just urged. If the patent is vacated from its issue, then every exercise of exclusive ownership has been illegal. If not, then infringers ought, at least, to be compelled to pay that which honest men have been willing to give the patentee.

This court has, as it seems to us, expressly refused to affirm the English doctrine, that a surrender and reissue vacated the original patent. *Shaw v. Cooper*, 7 Pet., 314; *Grant v. Raymond*, 6 Pet., 220. See also *Ames v. Howard*, 1 Sumner, 488; *Stanley v. Whipple*, 2 McLean, 37; *Woodworth v. Stone*, 3 Story, 753, 754; *Woodworth v. Hall*, 1 Wood & Minot, 257; *Eastman v. Bodfish*, 1 Story, 529.

But, again: It is urged, and as the main objection, that by the very act of surrender, under the statute, the patentee admits that his original patent is void, and, therefore, he is estopped from asserting its validity in a suit for its infringement.

To this we answer that he makes no such admission, even by the act of statutory surrender.

The 13th section provides "that whenever any patent which has heretofore been granted, or which shall hereafter be granted, shall be inoperative or invalid by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification more than he had or shall have a right to claim as new, if the error," &c.

A patent, then, may be reissued, if it be—1st, inoperative; or, 2d, invalid. Looking to what follows, the word "inoperative"

Argument for the defendant in error.

manifestly refers to the defective specification, and the word "invalid," to the claim of "too much," which, under the act of 1836, rendered the patent absolutely void.

A patent "inoperative" because of a "defective or insufficient" specification is not necessarily void. The specification may not describe the invention as clearly as might be desired, or so comprehensively as to cover a particular evasion of the patent, or it may fall short of describing the whole of the invention, illustrated by the model and drawings. In such case this court (*Batten v. Taggart*, 17 How., 84) held that the patentee had a right "to restrict or enlarge his claim, so as to give it validity and to effectuate his invention."

But an enlargement of the claim is a claim for something more; and if such a claim be valid, the original claim must be valid also, for "the greater includes the less."

The history of the litigation upon patents shows that many patents have been surrendered and reissued after they had been the subject of fierce controversy, and had repeatedly been declared valid by the courts of the United States. The validity of the famous Woodworth patent had been established in Massachusetts and Ohio. See *Brooks v. Bicknell*, 3 McLean, 250; *Washburn v. Gould*, 3 Story, 122; *Woodworth v. Sherman*, 3 Story, 171. And yet the patent was afterwards reissued. *Woodworth v. Stone*, 3 Story, 751; *Woodworth v. Edwards*, 3 Wood & Minot, 136 *et seq.*

So also with the Howe sewing machine patent.

The plea having averred surrender only, but not cancellation, the court could not know judicially but that the original patent was still in existence. The acts of surrender and cancellation are distinct, and are so recognized by the court in the case of *Batten v. Taggart*, 17 How., 80.

Mr. Stanbery, of Ohio, for defendant in error: I will consider, in their order, the grounds for reversal relied on by the plaintiff.

1. "That there may be a surrender of letters patent, which is not made for the purpose of reissue, under the 13th section of the act of July 4, 1836."

It does not seem of any moment to consider whether there may not be a surrender, under that 13th section, without a reissue; for if such surrender is allowable, as the plaintiff alleges, still it is a surrender under that section; and the question remains, as to the effect of the surrender.

The plaintiff argues, that there may be a surrender independently of the statute, and that such a surrender would not necessa-

Argument for the defendant in error.

rily imply that the patent was invalid. In support of this position, *Grant v. Raymond*, 6 Peters, 218, is cited.

No such question arose in that case, for the surrender in that case was in virtue of the statute then in force. The real question was as to the new patent issued after the surrender; for the statute then in force only provided for a surrender, and did not expressly authorize the reissue.

I find it difficult to understand what the plaintiff means by a surrender of a patent, independent of the statute. A patentee may, perhaps, (though it is by no means clear,) destroy his patent by cancellation. That is his own act; but he cannot surrender his patent to himself. The act implies a party capable of receiving the surrender.

Now, what is alleged in our plea is a surrender to the United States—that is, to the party from which the grant emanated. This sort of surrender is authorized by law, and it is the only sort of surrender contemplated by the statute. We have, therefore, under this plea, nothing to do with any other surrender than that authorized by the statute.

It is further claimed by the plaintiff, that “a surrender, under the 13th section, does not render the patent void *ab initio*. If the patentee chooses to risk a suit upon an original patent, he may recover upon it for infringements committed before it was surrendered.”

I do not consider it necessary to go into the inquiry whether, for all purposes and in all aspects, the original patent, after its surrender, is to be considered as void from its inception. We are only concerned, in this case, as to the operation or effect of the original patent as a cause of action, or a continuing cause of action after the surrender. We do not aver that, at the commencement of the suit, the plaintiff’s patent was void; but we merely say, that, after the suit was brought, the plaintiff surrendered his patent. This the plaintiff admits. What, then, is the effect of a surrender upon an action pending at the time of the surrender?

The surrender is to be allowed when the patent “shall be inoperative or invalid by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had, or shall have, a right to claim as new.”

These are the conditions on which alone, according to the statute, the surrender is authorized. When, therefore, the patentee avails himself of this permission, he must be taken to admit that his

Argument for the defendant in error.

patent is inoperative or invalid, at least until there is some averment to the contrary.

But further, the act of surrender extinguishes the right of action so far as the old patent is concerned, for there is no reservation of any right, either for prior or subsequent infringements, or for actions pending, to be asserted upon the old patent after the surrender. The only rights saved is under a reissue, and in virtue of the new patent, and this new right is confined by the express terms of the statute to "actions hereafter commenced for causes subsequently accruing." In the case at bar, the plaintiff counts upon a cause of action which accrued prior to the surrender; but the only rights which survive the surrender, survive alone by virtue of the new patent. Consequently, if the new patent does not sustain the pending action, the old one cannot have that effect.

In the case of *Woodworth v. Stone*, 3 Story's Rep., 749, a question arose upon the effect of a surrender and reissue *pendente lite*. The case was upon a bill for an injunction. Judge Story held that the case might proceed, notwithstanding the surrender or reissue, to prevent future and threatened infringements, and carefully distinguishes such a suit from an action at law, which only regards the past.

I do not find that the precise question now under consideration has been decided by this court. In *Stimpson v. Westchester R. R.*, 4 How., 402, the court say: "The charge of infringement in the declaration is laid some years after the new patent, so that the question does not arise whether an action could be sustained for a violation of the right prior to the corrected patent."

The case from which the above quotation was made arose under the 3d section of the act of 1832, which first provided for a reissue. It will be found that it did not contain the provisions contained in the 13th section of the act of 1836, confining the new patent to "causes subsequently accruing," and it would seem that this provision was added to settle any question which might arise upon the act of 1832.

In the case of *Batten v. Taylor*, 17 How., 74, the court came very near to a decision of this question, for it is said: "The plaintiff, by a surrender of that patent and the procurement of the patent of 1849 with the amended specifications, abandoned the first patent, and relied wholly on the one reissued."

Mr. Curtis, in his Treatise on Patents, sec. 255, seems to take it for granted, that, after the surrender, the infringement must be subsequent.

See also *Ames v. Howard*, 1 Sumner, 482, 488.

Argument for the defendant in error.

The counsel for the plaintiff cite the case of *Eastman v. Bodfish*, 1 Story, 529. That case has no relation to a surrender. It was a suit upon an extended patent, and simply decides that, as the time laid for the infringement fell within the time of extension, the plaintiff could not rely upon an infringement prior to the extension, but must be confined to the time laid in the declaration. Nor does the case decide that if the time had been laid prior to the extension the plaintiff might have recovered. However that may be, a patent extended is quite another thing from a patent surrendered.

I find only one case in the English books which has any relation to the case at bar—*Perry v. Skinner*, Webster's Patent Reports, 350. That case was upon a disclaimer, under a statute which made the amended specification part of the original patent; and the reporter adds this note at the close of the case:

"The result of the above decision would appear to be that the party entitled to letters patent in the title or specification, of which any disclaimer or memorandum of alteration has been enrolled, has no remedy at law in respect of an infringement prior to the date of the enrollment of such disclaimer or memorandum of alteration, but from the date of such enrollment the patentee acquires a new title."

If this is the consequence of a disclaimer, which becomes part of the old patent, how can there be a doubt that the same consequence results from a surrender and reissue? If the disclaimer works a new title by implication, the surrender and reissue do the same thing expressly.

In England the surrender of a patent works a total extinction of the grant for all purposes. I do not claim such an effect from our statutory surrender, except as to infringements prior to the surrender.

It is very certain that, from the date of the surrender and reissue, there is only one patent *in esse*, for there cannot be two patents for the same invention existing at the same time. Whatever rights survive the surrender must be asserted under the reissued patent, which, for some purposes, has relation to the original grant. The idea suggested by the plaintiffs' counsel, that, after the original patent has been surrendered, that patent may be used as the foundation for an action, or introduced in proof as a valid title, seems to me wholly inadmissible.

The plaintiff also claims that the plea is bad, because it does not aver a cancellation of the surrendered patent, and cites 17 How., 80. The case warrants no such conclusion. There is nothing in

Opinion of the court.

the statute about cancellation, and this word, whenever used by this court, is used as an equivalent term for surrender. In England no surrender can be made without a record, and perhaps a cancellation; but there a surrender works a total relinquishment of the grant, and as the Crown cannot receive such a relinquishment without a record, this ceremony is necessary. Hindmarsh on Patents, 246.

In conclusion, I beg to call the attention of the court to the following facts shown by the record: The original patent was granted to the plaintiff on the 30th November, 1852. This patent was surrendered on the 23d March, 1858, as is alleged in the declaration, "in consequence of an insufficient and defective description and specification of said invention; and such proceedings were then had that, on said 23d day of March, 1858, a new patent was granted to said plaintiff on an amended description and specification, previously filed in the Patent Office, for the same invention and improvement, and in accordance with said amended description and specification, which said new letters patent bear date March 23, 1858;" and then profert is made "of said reissued letters patent."

The infringement is next alleged to have been made or committed "after the making of said letters patent, after the reissue thereof," to wit, on the 25th day of March, 1858, and on divers other days and times between that day and the commencement of this suit." There is no question that these averments confine the plaintiffs to infringements after the reissue under the new patent. The plea then alleges "a surrender was made after the commencement of the suit of the patent before that time issued to him, and for the alleged infringement of which this action is brought." Now, it is perfectly clear that the original patent cannot be resorted to as a foundation for suit for infringements after its surrender, and during the life of the reissued patent. So, too, it is equally clear that infringements during the time of the new patent cannot, after its surrender, survive such surrender; for all rights of action under the reissued patent are totally gone, and whatever rights survive, as to duration of the term, &c., have relation only to the first patent.

Mr. Justice NELSON. The suit was brought by Moffitt against the defendants for the infringement of a patent for an "improvement in grain separators."

The defendants plead to the declaration that, since the commencement of the suit, the plaintiff had surrendered his patent to the United States, for the alleged infringement of which the action was brought. To which the plaintiff put in a general demurrer.

Syllabus.

The court overruled the demurrer, and sustained the plea, and gave judgment accordingly.

The 13th section of the act of Congress of July 4, 1836, provides, "that if a patent shall be inoperative, &c., it shall be lawful for the Commissioner, upon the surrender to him of such patent," "to cause a new patent to be issued, &c., and the patent so reissued" "shall have the same effect and operation in law on the trial of all actions hereafter commenced, for causes subsequently accruing, as though the same had been originally filed in the connected form," &c.

Now, the point in the case is, whether or not the patentee may maintain a suit on the surrendered patent instituted before the surrender, if he has not availed himself of the whole of the provision, and taken out a reissue of his patent with an amended specification. The construction given to this section, so far as we know, and the practice under it, in case of a surrender and reissue, are that the pending suits fall with the surrender. A surrender of the patent to the Commissioner within the sense of the provision, means an act which, in judgment of law, extinguishes the patent. It is a legal cancellation of it, and hence can no more be the foundation for the assertion of a right after the surrender, than could an act of Congress which has been repealed. It has frequently been determined that suits pending, which rest upon an act of Congress, fall with the repeal of it. The reissue of the patent has no connection with or bearing upon antecedent suits; it has as to subsequent suits. The antecedent suits depend upon the patent existing at the time they were commenced, and unless it exists, and is in force at the time of trial and judgment, the suits fail.

It is a mistake to suppose, that, upon this construction, moneys recovered on judgments in suits, or voluntary payment under the first patent upon the surrender, might be recovered back. The title to these moneys does not depend upon the patent, but upon the voluntary payment or the judgment of the court.

We are satisfied the judgment of the court below is right, and should be affirmed.

VANCE v. CAMPBELL ET AL.

(1 Black, 427.)

- i. Where a patentee, suing for an infringement of his patent, declares upon a combination of elements which he asserts constitute the novelty of his invention, he cannot, in his proofs, abandon a part of such combination and maintain his claim to the rest.

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2. Much less can he prove any part of the combination immaterial or useless.
3. The combination is an entirety; if one of the elements be given up, the thing claimed disappears.
4. The 9th section of the act of 1837, (5 U. S. Stat., p. 194,) which provides that the suit shall not be defeated where the patentee claims more than he has invented, applies only to cases where the part invented can be clearly distinguished from that claimed but not invented.
5. In a suit for the infringement of a patent right, no notice is necessary to justify the admission of evidence on behalf of the defendant to show the improvements existing at the date of the plaintiff's invention in the class of articles to which it belongs.
6. The rules of evidence prescribed by the laws of a State are rules of decision for the United States courts, while sitting within the limits of such State, within the meaning and subject to the exceptions contained in the 34th section of the judiciary act.
7. Where a bill of exceptions sets out that a witness was offered, was objected to on the ground of incompetency, and rejected by the court below, but does not state what facts he was called to prove, this court will not presume that his testimony would have been immaterial if it had been heard.

ERROR to the Circuit Court of the United States for the Southern District of Ohio.

This suit was commenced in the Circuit Court at Cincinnati, December term, 1859, by Vance against Campbell, Ellison, and Woodrow. Judgment for defendants. Writ of error sued out by plaintiff. The question argued here, and the material facts bearing upon it, are fully discussed in the opinion of the court.

Messrs. Lee and Fisher, of Ohio, for plaintiff in error.

Mr. Lincoln, of Ohio, for defendant in error.

Mr. Justice NELSON. This is a writ of error to the Circuit Court of the United States for the Southern District of Ohio.

The suit was brought by Vance against the defendants in the court below, for the infringement of a patent for certain improvements in cooking stoves.

The patentee recites in his specification that it has been very difficult heretofore to make the bottom and back plates of the oven sufficiently hot, and equally difficult to prevent the front and top from becoming too much heated. For this difficulty, he says, he has devised a remedy, which consists in a particular arrangement of the flues, for the purpose of equalizing the draught above and below the oven.

To heat the oven equally on all sides, he further observes, it must be uniformly enveloped with heated products of combustion; and, to this end, the flue is divided in front of the oven into two branches, one passing above, the other below the oven, and which reunite near the middle of the back flue, where they enter the pipe

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i, or smoke-pipe, which is made to descend to that point. The patentee then speaks of certain irregularities that would still exist in the distribution of the heat around the oven, to prevent which he places a plate, A, in front of the cold-air chamber, so as to form a flue in front, whose mouth is at the same distance from the flue above the oven that the lower end of the pipe *i* in the back part of the stove is below the oven; and these flues being at all times unobstructed, their action will be uniform, and the heat be equally distributed under all circumstances on the several sides of the oven. The patentee then states that he claims as new, and for which he desires a patent, "the combination of the diving pipe *i* with the flues F, arranged as herein described, for the purpose of evenly distributing and equalizing the heat on four sides of the oven, without using or requiring any dampers, as herein set forth."

The main point in the case turned upon the question of infringement. The defendants' stove had no plate A in front of the cold-air chamber, forming a front flue; and, hence, one of the elements of the plaintiff's combination was not used; and, if so, there would be no infringement. The plaintiff, however, sought to get rid of the objection by proving that that part of his contrivance and claim were immaterial and useless, and that the diffusion of the heated air around all sides of the oven would be as effectual without as with it. Assuming this proof to be competent to help out the infringement, the patent would stand on the combination of the diving pipe *i* and flues, as arranged, without the front flue, formed by the plate A in front of the cold-air chamber, and the division of that flue called the "mouth" in the specification.

Now, the plaintiff, in his declaration, sets out the patent, specification, and claim, as issued to him by the Government, and founds his action upon them as thus set out, and charges the defendant as having infringed the invention as thus claimed. The infringement as charged is denied. This is the issue presented for trial, and which the defendants were called upon and were bound to prepare to meet. This issue involved the question whether or not the defendants had infringed the improvements in the cooking stove, consisting of a combination of the diving pipe *i* with the flues, as arranged, one of which was a flue in front of the stove formed by plate A, the flue being one of peculiar construction. It is quite apparent, if this part of the combination is abandoned, and the remaining part of it relied on alone, the issue is changed and the defendants surprised, the pleadings misleading instead of advising them of the question to be tried.

It is true, by the ninth section of the act of 1837, (5 U. S. Stat.,

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p. 194,) it is provided that the suit shall not be defeated where the patentee claims more than he has invented. It must be, however, in a case where the part invented can be clearly distinguishable from that claimed, but not invented.

This provision cannot be applied to the present case, for, unless the combination is maintained, the whole of the invention fails. The combination is an entirety. If one of the elements is given up, the thing claimed disappears.

Besides the above view, it is most apparent, from an examination of the specification, that the patentee not only described, but claimed the front flue formed by the plate A, fig. 2, as a material and important part of the arrangement for distributing equally the hot air on the several sides of the oven. To prevent irregularities, referred to and particularly described, he observes: "I place the plate A as in fig. 2, so that it will form a flue in front of the cold chamber, whose mouth (as it is called) is at the same distance from the flue above the oven that the lower end of the pipe i is above the flue below the oven; and these flues being at all times unobstructed, their action is uniform, and the heat is equally distributed, under all circumstances, on the several sides of the oven." The patentee might as well have undertaken to prove any other part of the combination immaterial and useless as the part above, and its uses so particularly described. Indeed, according to the doctrine contended for, a patent would furnish no distinct evidence of the thing invented, as that would depend upon what part of the specification and claim the jury might think material or essential.

Several exceptions were taken to the admissibility of evidence offered by the defendants, but without referring to them specially, it will be a sufficient answer to say that it was competent and relative as showing the state of the art in respect to improvements in the manufacture of cooking stoves at the date of the plaintiff's invention. No notice was necessary in order to justify the admission of evidence for this purpose.

The plaintiff, in the course of the trial was offered as a witness, and objected to by the defendants as incompetent, and his testimony was excluded. It is admitted that the testimony of the parties to the suit is competent, according to the rules of evidence in the State courts of Ohio.

The thirty-fourth section of the judiciary act provides that the laws of the several States, with the exceptions there stated, shall be regarded as rules of decision, in trials at common law in the courts of the United States. This section has been construed to include the rules of evidence prescribed by the laws of the State in

Statement of the case.

all civil cases at common law not within the exceptions therein mentioned. The point has not been, perhaps, expressly decided in a case reported in this court, but the principle has been recognized in several cases. 12 Peters, 89; 6 How., 1; 12 How., 361.

The facts which this witness offered to prove are not stated in the bill of exceptions. We cannot, therefore, disregard the exception upon the idea that the testimony could not have been material, or could not have changed the result of the verdict.

JUDGMENT REVERSED—VENIRE DE NOVO.

HAUSSKNECHT v. CLAYPOOL ET AL.

(1 Black, 431.)

1. The rules of evidence prescribed by the laws of a State are rules of decision for the United States courts while sitting within the limits of such State, within the meaning and subject to the exceptions contained in the 34th section of the judiciary act.
2. Where a bill of exceptions sets forth that a witness was produced, was asserted to be competent by his counsel, and was rejected by the court, a court of error will imply that the witness was material to sustain the issue without a direct statement to that effect in the bill of exceptions.
3. Brevity in bills of exception commended.

ERROR to the Circuit Court of the United States for the Southern District of Ohio.

Haußknecht brought trespass on the case against Claypool and Lynn, in the year 1859, for an infringement of his patent for an improved running gear for carriages. The suit was commenced in the Circuit Court of the United States for the Southern District of Ohio, and the damages laid at \$5,000. The defendants pleaded the general issue, and brought divers witnesses to prove that the plaintiff was not the original inventor of the thing he had patented, but that it had been described in printed works, and was in actual public use at a time anterior to the date of his patent. The plaintiff himself was produced as a witness to sustain his own case. His counsel asserted that by the law of Ohio (sec. 310, code of civil procedure) he was a competent witness in his own behalf. The defendants objected on the grounds: First, that he was a party to the cause, and, therefore, incompetent even by the laws of Ohio. Second, that no notice of his intention to testify had been given to the defendants or their attorney; and, third, that by a *rule of the court*, parties to suits were incompetent witnesses. These objections the court sustained, and the plaintiff's counsel took a bill

Argument for the defendant in error.

of exceptions. Verdict for defendants. Writ of error to Supreme Court of the United States sued out by plaintiff.

Messrs. Lee and Fisher, of Ohio, for plaintiff in error: Section 310 of the Ohio code of civil procedure reads thus: "No person shall be disqualified as a witness in any civil action or proceeding by reason of his interest in the event of the same, as a party or otherwise, or by reason of his conviction of a crime, but such interest or conviction may be shown for the purpose of affecting his credibility." The 34th section of the judiciary act of 1789 provides that the laws of the several States, except where the Constitution, treaties, or statutes of the United States shall otherwise require or provide, shall be regarded as rules of decision in trials at common law, in the courts of the United States, in cases where they apply." It would seem to require no proof to show that a rule of evidence was "a rule of decision," within the meaning of this act. But this court has expressly decided that question. *McNeil v. Holbrook*, 12 Pet., 84. "The rules of evidence prescribed by the statute of a State are always followed by the courts of the United States when sitting in the State in commercial cases, as well as in others." *Sims v. Hundley*, 6 How., 1. But it may be said that there was a rule in the court below which disqualified this witness. It is only necessary to reply to this that the court below could not abrogate or overcome a statute of the State by a general rule any better than by a decision. The rule and the ruling stand on the same footing. No notice that the plaintiff would testify as a witness was necessary in the court below. Section 313 of the Ohio code, which requires such notice, was repealed April 12, 1858. See section 3d of the statute of Ohio, of said date, entitled "An act to amend the 313th and 314th sections of the code of civil procedure."

It is objected that the bill of exceptions does not aver that the rejected evidence was material to the plaintiff's cause.

In *Smith v. Carrington*, 4 Cranch, 62, this court held that, if evidence were illegally admitted, the court could not inquire into its weight or importance, but would reverse the judgment; and we suppose the converse of this proposition is equally true, and if evidence be illegally rejected, this court will not inquire into its importance, but will reverse the judgment.

Mr. Lincoln, of Ohio, for defendant in error: It is true, as claimed on behalf of the plaintiff in error, "that the laws of the several States, except where the Constitution, treaties, or statutes

Argument for the defendant in error.

of the United States, shall otherwise require or provide, shall be regarded as rules of decision, in trials at common law in the courts of the United States, in cases where they apply." And it is also true that the code of civil procedure of the State of Ohio provides, in its 310th section, that "no person shall be disqualified as a witness in any civil action or proceeding by reason of his interest in the event of the same, as a party or otherwise." But the same code, in its 604th and 605th sections, enacts, that its provisions shall not affect "any special statutory remedy," and that "where by statute a civil action, legal or equitable, is given, and the mode of proceeding therein is prescribed, this code shall not affect the proceedings under such statute, until the Legislature shall otherwise provide; but the parties may, if they see fit, proceed under this act, and in all such cases, as far as it may be consistent with the statute giving such action, and practicable under this code, the proceedings shall be conducted in conformity thereto." And it is provided in the same code, section 106, "that every pleading of fact must be verified by the affidavit of the party, his agent or attorney;" and in sections 83, 85, and 92, "that the rules of pleading heretofore existing are abolished," and that the pleadings shall contain "a statement of the facts constituting the cause of action, (or the defense,) in ordinary and concise language." Is an action for the infringement of rights secured by a patent, in which the pleadings are specifically regulated by the act of Congress, a case to which the provisions of the Ohio code necessarily apply?

It will be perceived that the provisions of the statute of Ohio, which makes the parties to the record competent witnesses, are by no means of universal application. The design of the new system of civil procedure was to abolish all distinctions between the pleadings in cases at law and in equity, and to simplify issues, by requiring the pleadings to be in ordinary language, and to be verified by oath, and to abbreviate trials by permitting the parties to testify. But it was not designed to apply the new rules of evidence to cases where the new system of pleading is inapplicable. The right of the court below, under its power "to make and establish all necessary rules for the orderly conducting of business, provided such rules are not repugnant to the laws of the United States," to prevent by rule the parties to the record from testifying, is very clear.

It would have been manifestly improper for the court below to have adopted the provision of the Ohio code changing the law of evidence in the "civil action," without at the same time adopt-

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ing the modes of pleading established by the same code, by which each party, in advance of the trial, is advised of the nature of the testimony to be expected from the adverse party, by the verification under oath of the statement of his case, in ordinary and concise language. And the court, in establishing a rule which excludes such testimony from the jury, was equally within the bounds of the law, and within the rules of propriety.

But, at all events, the judgment in the present action cannot be reversed because of the exclusion of the plaintiff's evidence. The record discloses nothing more than that the plaintiff offered himself as a witness, that the court refused to permit him to testify, and that he excepted. It is not shown that his evidence, if admitted, would have been material; nor does it appear that the exception was taken at the time. And all presumptions are against the existence of error.

Mr. Justice NELSON. This suit was brought by the plaintiff in error against the defendants for the infringement of a patent for an improvement in the running gear of carriages. The verdict and judgment were for the defendants.

The only question presented in the bill of exceptions is, whether or not the plaintiff was a competent witness to give testimony in his own behalf. According to the law of Ohio, parties are competent witnesses. The case falls within the opinion of the court just delivered in the case of *Vance v. Campbell and others*. It is objected that the bill of exceptions does not state that the witness was material, and hence there could be no error in his exclusion. The bill of exceptions is brief, presenting only this single question, and stating no more of the case than is necessary to present it, which practice the court commends.

The bill states that on the trial the plaintiff, to sustain the issue on his part, offered himself as a witness, and his counsel claimed he was competent, &c. Though it would have been more in conformity with the usual practice to have stated that the witness was material to sustain the issue, we think that enough is stated to imply the materiality, and that this objection cannot be maintained.

JUDGMENT REVERSED—VENIRE DE NOVO.

Opinion of the court.

WRIGHT v. BALES.

(2 Black, 535.)

The statutory enactments of the States of the Union, in respect to evidence in cases at common law, are obligatory upon judges of the courts of the United States, who are bound to apply them as rules of decision.

ERROR to the Circuit Court of the United States for the Southern District of Ohio.

On the 31st of May, 1859, Matthias B. Wright and John Conner brought trespass on the case in the Circuit Court of the United States for the Southern District of Ohio, against Moses Bales, alleging in their declaration an infringement by defendant of a certain patent right to make and vend a draining plow of their invention. The defendant pleaded not guilty. Verdict for defendant, with costs. Plaintiff, in his exceptions, assigned, among other grounds of error, the refusal of the court to allow Wright, one of the plaintiffs, to testify in the cause. Writ of error issued April 2d, 1860.

Mr. Lee and Mr. Fisher, of Ohio, for plaintiff in error.

By the law of Ohio, the parties to a cause are competent witnesses in it. State laws of evidence are rules of decision in civil trials at the common law before courts of the United States. Civil Code of Ohio, § 310; Act of April 12, 1858, amending code; *Mc-Niel v. Holbrook*, 12 Peters, 84; *Sims v. Hindley*, 6 How., 1; *U. S. v. Dunham*, Monthly Law Reporter, July, 1859; *Smith v. Carrington*, 4 Cranch, 62.

No counsel appeared for defendant in error.

Mr. Justice WAYNE. The plaintiff in error seeks for a reversal of the judgment in this case, for errors alleged to have occurred upon the trial of it in the court below, but our attention having been called to the rejection of a witness, we shall confine ourselves to that assignment of error, without considering such of them as relate to the merits of the litigation or to the admission of the deposition of A. B. Dickerson, taken *de bene esse*, as evidence in the case.

The error complained of is, that the court erred in refusing to allow one of the plaintiffs, Matthias B. Wright, to testify as a witness in the cause.

The cause was tried in the Circuit Court of the United States, sitting in Cincinnati, Ohio. In the year 1853, the Legislature of

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that State passed a statute entitled "An act to establish a code of civil procedure," in which it is declared that "no person shall be disqualified as a witness in any civil action or proceeding by reason of his interest in the event of the same, as a party or otherwise, or by reason of his conviction of a crime, but such entries or conviction may be shown for the purpose of affecting his credibility." This statute was in force at the time of this trial. Wright, one of the plaintiffs, was offered as a witness under it, but was rejected by the court as incompetent to testify, by reason of his interest in the event of the suit, and because of a rule of court, which it was said excluded such a witness from examination unless previous notice had been given to the opposite party of an intention to examine him.

It appears, however, whatever may have been the intended application of that rule, under the "code of civil procedure" or otherwise, that it had become inoperative by the repeal in the year 1858 of that section of the Ohio code which required such a notice to be given. The repealing act of 1858 is a statute to amend the 313th and 314th sections of the code of civil procedure.

The rejection of Wright, then, as a witness, for incompetency to testify in his own behalf, raises again, in this court, the question whether the statutory enactments of the States of the Union, in respect to evidence in cases at common law, are not obligatory upon judges in the courts of the United States to apply them as rules of decision in the trials of such cases.

The 34th section of the judiciary act of the 24th September, 1789, (Statutes at Large,) is in these words: "that the laws of the several States, except where the Constitution, treaties, or statutes of the United States shall otherwise require or provide, shall be regarded as 'rules of decision' in trials at common law in the courts of the United States, in cases where they apply." Meaning by the word trials, as this court has said in *Wayman v. Southard*, 10 Wheat., matters of controversy, and not to executions and the mode of executing them. As to the application and the extent of the allowances of the laws of the States in such cases, this court gave its interpretation of the 34th section very fully in *McNeil v. Holbrook*, 13 Peters, 84. We then said: "We do not perceive any sufficient reason for so construing this act of Congress as to exclude from its provisions those statutes of the several States which prescribe rules of evidence in civil cases in trials at common law. Indeed, it would be difficult to make the laws of the State in relation to the rights of property the rule of decision in the Circuit Court, without associating with them the laws of the same State, prescrib-

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ing the rules of evidence by which the rights of property must be decided. How could the courts of the United States decide whether property had been legally transferred, unless they resorted to the laws of the State to ascertain by what evidence the transfer must be established. In some cases the laws of the States require written evidence, in others it dispenses with it, and permits the party to prove his case by parol testimony; and what rule of evidence could the courts of the United States adopt to decide a question of property but the rule which the Legislature of the State has prescribed? The object of the law of Congress was to make the rules of decision in the courts of the United States the same with those of the States; taking care to preserve the rights of the United States, by the exceptions contained in the same section. Justice to the citizens of the several States required this to be done, and the natural import of the words used in the act of Congress includes the laws in relation to evidence, as well as the laws in relation to property. We think they are both embraced in it, and as by a law of Georgia the indorsements on these notes were made *prima facie* evidence that they had been so indorsed by the proper party, we think that the Circuit Court was bound to regard this law as a rule of evidence." The same ruling was repeated by this court in *Sims v. Hundley*, 6 Howard, 1, upon a question whether a notary's certificate, made evidence by a statute of Mississippi, was admissible in the Circuit Court of the United States for that State. We said, it is true that upon general principles of commercial law, this certificate would not be admissible. But it is made evidence by the statutes of Mississippi; and the rules of evidence prescribed by the statute of a State are always followed in the courts of the United States when sitting in the State in commercial cases as well as in others.

Since these decisions were made, the judges of the United States courts have administered the laws of evidence of the States in conformity with them, and there was error in this case by the court below for not having done so. For such ruling, we direct that the judgment be reversed and order a *venire facias de novo*.

APPLETON *v.* BACON & NORTH.

(2 Black, 699.)

Parties engaging the services of an inventor under an agreement that he shall devote his ingenuity to the perfecting of a machine for their benefit, can lay no claim to improvements conceived by him after the expiration of such agreement.

Statement of the case.

THIS was an appeal from the Circuit Court for the District of Columbia.

On the 7th of December, 1858, the appellants, Appleton, filed their bill in the Circuit Court of the United States for the District of Columbia for an injunction to restrain the defendant, Bacon, from using, selling, or trading with, or otherwise employing a certain patent right for a new and improved mode of folding paper invented by defendant, North, which had been issued by the Patent Office to the defendant, Bacon, on the 10th of August, 1858. And also from constructing or authorizing to be constructed any machine or machines, having or containing the said improvement, &c., as aforesaid patented to him, until the further order of the court; that he be decreed to surrender and deliver up the said letters patent to be canceled, that they be declared void, and for general relief on the ground that the complainants were assignees of the invention, and the patent should have been issued to them, but the defendant, Bacon, had fraudulently procured it to be issued to himself.

The defendant, North, admitted all the facts stated in the bill. The defendant, Bacon, denied all fraud and set up title in himself by reason of certain contracts alleged to have been made by North, (the inventor,) with a company called the American Book and Paper-Folding Company, which he alleged had been assigned to him, and that North had recognized and was acting under the said assignments at the time he made the said improvements.

No replication was filed, but evidence was taken on both sides. North was examined as a witness by complainants, under an agreement saving exceptions to his competency, and his testimony was by the court ruled to be inadmissible.

The court held that when part of the improvements were made by North he was in the employment of Bacon, under some agreement, (*either express or implied,*) and that all improvements made by him while so employed should be the property of Bacon. As to those improvements, they decreed that they rightfully belonged to Bacon, and as to those discovered after he went out of Bacon's employment, they belonged to the complainants.

From this decree cross-appeals were taken by the respective parties to the Supreme Court.

*Mr. Bradley and Mr. McCalla, of Washington city, for appellants,
Bacon and North.*

Mr. Carlisle and Mr. Webb, of Washington city, contra.

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Mr. Justice NELSON. This is an appeal from the Circuit Court of the United States for the District of Columbia.

The bill was filed by the plaintiffs against the defendant, Bacon, to compel him to surrender and cancel letters patent for a new and useful machine for folding paper, granted 10th of August, 1858. Both parties set up a claim to the invention as assignees of John North, the inventor. The assignments to the plaintiffs were made under the dates of 12th of August, 1858, and 7th July, 1859. The defendant claims under an agreement made between North and the American Book and Paper-Folding Company, dated 6th of February, 1854, and between the same company and Newell and John North, 2d of May, 1854, and by a subsequent verbal agreement between the defendant and John North, some time in May, 1856.

According to the terms of the two written agreements between North and the American Company, the former stipulated to engage in the service of the company, and devote himself to the making of improvements in paper-folding machines for a compensation mentioned ; and, further, that all improvements and inventions made or discovered should be the property of the company, and that he would take all proper steps for the purpose of procuring patents for said improvements. It was further stipulated that this agreement may be terminated by North on giving three months' notice after having served one year, and the company at any time on giving thirty days' notice.

This company, having subsequently resolved to close their business, gave a written notice to North on the 30th of May, 1857, that his services would be no longer required, and, about the same time, sold at auction, among other things, their interest in the improvements made by North in paper-folding machines, including a patent issued 15th of April, 1856, to North, and another issued to E. N. Smith, 27th of November, 1849, and reissued 7th of January, 1851, which interests and property were purchased by one Anson Hardy ; and on the 1st of July, 1856, said Hardy assigned all his interest in the property to Bacon, the defendant.

The defendant, after his purchase of these machines, made a verbal arrangement with North to enter into his service and devote himself to making improvements in folding machines, upon the same terms and conditions as those under which he had been previously engaged with the company. This arrangement continued till about the middle of July, 1857, when he left the service of the defendant and engaged in the manufacture of sewing machines. Now, it is claimed by the defendant that the inventions or improvements embraced in the paper-folding machine in ques-

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tion were the fruits of the labors of North while engaged in his, the defendant's, service, and when he was entitled to the benefit of his discoveries, or when he (North) was engaged in the service of the American Paper-Folding Company, who were entitled to the benefit of these discoveries, and which passed to him, the defendant, by assignment. The right, as thus derived, constitutes the title of the defendant to the invention and patent in controversy.

It has already been stated that among the property which passed to the defendant from the American Company through Hardy was the patent to North for a paper-folding machine issued 15th of April, 1856. The labors of North while in the service of defendant were devoted to improvements upon this machine, and it is this machine, as improved in July, 1857, when North left the service of the defendant, that it is claimed embodied the invention and improvements in question, and for which a patent was issued to the defendant 10th of August, 1858. The circumstances under which this patent was issued will be stated hereafter. For the present, our inquiry is whether or not North made these discoveries while engaged in the service of the defendant or in the service of the American Folding Company.

North, who was made a defendant and a party on the record, was called as a witness on the part of the plaintiffs, and very fully examined on both sides. No objection is taken to the competency of his testimony before the officer taking it, nor in the brief in this court, and we must regard it, therefore, as admitted by consent. This witness, after giving a history of the machine, of its exhibition at the fair of the American Institute in the fall of 1856, and also at Appleton's bindery, in Franklin street, in the city of New York, in February, 1857, and of some improvements made upon it at that place, states that about the first of June, 1857, he removed the machine to a shop in Middletown, Connecticut, and worked upon it there some six weeks, endeavoring to improve it, but with no good results; gave up the effort and went into other business—making sewing machines. This was about the middle of July, 1857.

The difficulties in the working of the machine while at Appleton's and at Middletown were in the adjustment to correspond with the different signatures—the register, also, was imperfect—and a fullness in the sheet which wrinkled it.

This machine was afterwards removed to Colt's armory in Hartford, Connecticut; and we have the testimony of E. K. Root—a witness for the defendant, and mechanical engineer—who examined it there, and saw it in operation. He was asked—"Of the sheets

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you have seen folded on that machine what proportion were crimped or wrinkled, and to what amount?" Answer: "My impression is that about one half were wrinkled more or less—pretty much all on one side of the machine—so much as to be objectionable." "To what extent, if at all, would you consider the amount of wrinkling you observed as affecting of itself the practical value of the machine?" Answer: "I should say it would prevent its use on all good book work."

This testimony is confirmed by two other witnesses, Gavet and Mathews.

The machine to which these witnesses refer and speak of embodied all the improvements ever made upon it by North. Indeed, it is admitted he made none after the middle of July, 1857, and it is quite clear from the evidence that it was an unsuccessful experiment as a practical folding machine, and abandoned by him as such.

In the spring of 1858, North, at the solicitation of Mathews, who had charge of the bindery department of the Appletons, turned his attention to the invention of a machine that would fold the size of duodecimo sheets, all the previous machines that had been constructed having been adapted only to the folding of octavo volumes. As five sixths of the business of book folding was of the small size, the invention was regarded as a great desideratum. This is the machine afterwards produced by North, and for which he applied to the Patent Office for a patent. The necessary papers, model, and certificate of payment of the patent fee were forwarded to the office 27th of May, 1858. The machine will fold books of both octavo and twelve-mo size with entire success.

The papers and model were filed in the Patent Office 10th June, 1858, and the patent issued to S. T. Bacon, the defendant, instead of to John North, the inventor, on the 10th of August following, and this without any previous notice to him. How this happened in the Commissioner's office has not been explained. It was a very grave irregularity. The specification on file was in the name of North, the application in his name, and the patent fee paid by him. We have seen the defendant, to whom it was issued, had no right to it, legal or equitable. The officer must have been imposed upon by the use of the old machine of 1856, which we have seen was but an unsuccessful experiment, and abandoned. The plaintiffs, as assignees of North, have made out a clear right to the patent, and the decree of the court below must be reversed and the cause remitted, with instructions to enter a decree for the plaintiffs, directing the defendant to surrender the patent to be canceled.

Statement of the case.

EAMES v. GODFREY.

(1 Wallace, 78.)

Where a patent is for a combination of distinct and designated parts, it is not infringed by a combination which varies from that patented, in the omission of one of the operative parts and the substitution therefor of another part substantially different in its construction and operation, but serving the same purpose.

GODFREY sued Eames in the Circuit Court of the United States for the District of Massachusetts, in an action on the case for infringing a patent for a new and useful improvement in boot-trees, of which patent he, Godfrey, was the assignee. The defendant pleaded not guilty, and gave notice of special matters of defense. The case was tried by a jury, who found the defendant guilty, and assessed the damages at \$2,177 50.

The patent was for a combination of mechanical powers for a new and useful improvement in boot-trees, and included a certain mechanism for *distending the leg of the boot-tree*. The plaintiff did not claim that the defendant had used the same mechanism that he did for *distending the leg* of the boot-tree, but that the defendant had used *all the other parts of his combination*, and that the mechanism which the defendant used, although differing in construction and operation from that described in the patent, *yet performed the same function*. The defendant contended, that not having used the mechanism described in the patent for distending the leg of the boot-tree, although he had used the other parts of the combination, he was not guilty of infringing the patent, and requested the court so to rule. The court refused to rule as requested, but instructed the jury "that to make out an infringement of the claim for combination, it was not necessary for the plaintiff to show that the mechanism for distending used by the defendant and its mode of operation were the same with that described in the plaintiff's patent for the purpose of distending the boot-tree; and that if said mechanism for distending the leg, &c., used by the defendant was not the same mechanism, operating in the same manner as that described in the plaintiff's patent for the same purpose; still, if there were in the defendant's machine a mechanism performing the same function as that performed by plaintiff's distending mechanism, and if this was combined with the other parts in the manner in which the distending mechanism described in the plaintiff's patent was combined, it was an infringement of said patent, and the defendant would be liable therefor."

The defendant excepted to the instructions given, and the refusal of the court to instruct as prayed for.

Opinion of the court.

On error here the instructions and refusal, as aforesaid, were the points before this court.

Mr. F. A. Brooks, for the plaintiff in error; Mr. Causten Browne, contra.

Mr. Justice DAVIS delivered the opinion of the court.

The patent in controversy was for a combination of mechanical powers to effect a useful result, and such a patent differs essentially in its principles from one where the subject-matter is new.

The law is well settled by repeated adjudications in this court and the Circuit Courts of the United States that there is no infringement of a patent which claims mechanical powers in combination, unless all the parts have been substantially used. The use of a part less than the whole is no infringement.

In *Prouty & Mears v. Ruggles*, 16 Peters, 341, the law is well considered. The patent there was for the combination of certain parts of a plough, arranged together so as to produce a certain effect. The suit was for an infringement. The court below had charged the jury that unless the whole combination was substantially used in the defendant's plough it was no violation of the plaintiff's patent. Chief Justice Taney, in deciding the case, said: "None of the parts referred to are new, and none are claimed as new; nor is any portion of the combination less than the whole claimed as new, or stated to produce any given result. The end in view is proposed to be accomplished by the union of all, arranged and combined together in the manner described. The use of any two of these parts only, or of two combined with a third, which is substantially different in form or in the manner of its arrangement and connection with the others, is, therefore, not the thing patented. It is not the same combination if it substantially differs from it in any of its parts."

Testing this case by these principles, the court erred in charging the jury as it did, and in refusing to instruct as asked by the defendant. There is nothing in the record that shows in what manner the mechanism used by Eames, in distending the leg of the boot-tree, differed from that claimed in the patent. It is stated that the mechanism used by Eames was different in its construction and operation, but how far the difference extended, we are left to conjecture. It is fair to presume, in the absence of proof, that it was essentially different. If, however, the mechanism used by Eames was not substantially different in its form or the manner of its arrangement from the mechanism used by Godfrey, there was

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an infringement; but this was a question that should have been left to the jury to pass on. The court laid down a broad rule without qualification, that although Eames's mechanism for distending the leg of the boot-tree did differ in its construction and operation from that patented, yet if it performed the same *functions* as the mechanism in the combination, there was an infringement. This view of the law was wrong on principle and authority. Eames had a right to use any of the parts in Godfrey's combination, if he did not use the whole; and if he used all the parts but one, and for that substituted another mechanical structure substantially different in its construction and operation, but serving the same purpose, he was not guilty of an infringement.

JUDGMENT REVERSED AND VENIRE AWARDED.

JONES ET AL. v. MOREHEAD.

(1 Wallace, 155.)

1. The claim of Sherwood, under his patent, granted in 1842, and extended in 1856, for "a new and useful improvement in door-locks," so far as the claim is for "making the cases of door-locks and latches double-faced, or so finished that either side may be used for the outside, in order that the same lock or cased fastening may answer for a right or left-hand door, substantially as described;" that is to say, the *first* claim in his schedule is for a thing which is not original with him, and void. And the question is raised by the court, but not decided, whether "the making of the case which incloses the internal works of the lock, with two faces just alike, and so well finished off in point of style that either side may be presented outwards, is a matter which could be patented, if no locks with such cases had ever been made before."
2. This *part* of the invention, known as the Janus-faced lock, not being original, no action lies by Sherwood or his assignees for using it in combination with other inventions not patented by that person; nor can persons so using it be made infringers by an argument which, assuming the validity of Sherwood's invention, mingles it with these other parts, and then treats the whole as a *unit*, and gives to him or his assignees damages equivalent to the net profits on the manufacture of the entire lock.
3. Where parties in their answer, as originally filed, to a bill for infringing a patent, admit that they did manufacture and sell the articles alleged to have been patented, the fact thus admitted in the answer must be accepted as established. As, however, the admission need go no further than its terms *necessarily* imply, the court will, under special circumstances, and where this is promotive of justice, assume that the smallest number of articles were made consistent with the use of the word involved, in the plural, and with the use by the defendants of any part of the patent which is valid.

THIS was a bill filed in the Circuit Court for the Western District of Pennsylvania, to restrain the infringement of a patent for

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protecting the manufacture of a certain sort of door-locks, called Janus-faced locks, and for an account; the parties to the suit being two large manufacturing firms in the city of Pittsburg. The history of the invention or claim of invention in question was essentially thus: Till within a few years past most of the door-locks used in this country were imported from England. It was thought desirable, therefore, to have, invent, or use some plan by which this article could be obtained more cheaply and better than the imported, notwithstanding the higher price of labor here, the article of door-locks being one of immense consumption in this country. This object was in part effected by making the locks of cast iron; but some difficulty in the way of these cheaper productions were thought to exist, in the fact that door-locks had to be made "*right and left*," and that a lock made for a right-hand door had to be turned upside down in order to be used on a left-hand door, and *vice versa*. It was conceived, therefore, that if this difficulty of right and left-hand locks was obviated, and every lock made equally capable of use on right or left-hand doors, an advantage might be gained. An American, named Sherwood, under whom the complainants claimed, conceiving that he had invented a mode of effecting the object, and that finishing a lock on both faces was an invention and proper subject for letters, procured a patent in 1842, (extended in 1856,) and established a manufactory of this sort of lock. His patent was for "*a new and useful improvement in door-locks*." The language of his schedule was as follows:

"What I claim as my invention, and for which I desire an exclusive right by letters patent, is, making the cases of door-locks and latches *double-faced*, or so finished that *either* side may be used for the *outside*, in order that the same lock or cased fastening may answer for a right or left-hand door, substantially as described.

"I also claim the peculiar construction and double action (upon an inclined and horizontal track or way) of the locking car B, as hereinbefore described, and the combination of the locking car B and safety cars G G³ with one another, and with the connecting or vibrating bar and bolt A, as within described, so as to fasten the bolt c securely and prevent its being picked.

"I also claim so constructing the bolt as hereinbefore described, that by simply turning it over in the lock-case it is adapted to a right or left-hand door."

But the two improvements claimed in the second and third of these claims were superseded soon after Sherwood had obtained his

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patent, by the invention of a certain Calvin Adams—*this Adams being a member of the firm who were the defendants in this suit. He, applying his improvement in the specific internal arrangement to the case of the lock, as Sherwood had claimed and obtained a patent for that, made a new combination, called the Janus-faced lock, whose manufacture, the complainants—successors to Sherwood's rights—had brought this bill to restrain and have an account of. It was not proved nor argued that the defendants had used any part of Sherwood's patent, except the double-faced casing. In fact, no locks with the particular internal mechanism specified in Sherwood's patent were ever made, except one or two made by Sherwood himself.*

The defendants below answered the bill, *admitting that they had made locks of the kind described in the patent*, and claiming that *they were the rightful owners of that patent from Sherwood, and therefore had a right to manufacture those locks.* Upon this issue considerable testimony was taken, when the defendants, becoming satisfied that they were not the legal owners of the patent, asked leave to amend their answer by *denying that they had ever made locks of the kind described in it*; and by asserting that the patent was invalid for want of novelty. The Circuit Court permitted them to assert the invalidity of the patent as wanting novelty, but *refused to allow them to deny that they had manufactured the locks described in it.* The admission that they *had* manufactured them stood, therefore, on the record as it came up to this court.

On the trial below—under the defense of want of originality—great numbers of locks were brought into court, many of which were older than Sherwood's, and were undoubtedly cased on both sides. Certain ones were particularly relied on: two from the gates of the New York city hall; one from the custom house in that city; one or more from the city hospital, and one from the gate of St. Mark's church. Several manufacturers of reputation, who were offered as experts, testified that in their opinion these were not essentially different in principle from Mr. Sherwood's lock. The counsel below for Sherwood's patent argued, however, that no one of these locks had been made with an *intention* to obviate the difficulty of having right and left-hand locks, or that practically any of them had been so used, or that any person, before Sherwood, in seeing one of them, had thus applied them, or perceived that they could be so applied. He contended, with a greater or less degree of force, that the custom-house lock was, in fact, from an open outdoor gate; that its inside was covered tight, in order to preserve the works of the lock from the weather and from rust—a

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device necessary in all outdoor gate locks; that it was not well suited for a Janus-faced lock, and was *finished* on one side only; that it was a left-hand lock, and not a door-lock, properly speaking, at all. The lock taken from the city hospital gate, he argued, was a dead lock, a right-hand lock; though he admitted, that by putting it wrong side out, and making some alterations, it might be converted into a left-hand dead lock. The same he thought was to be said of the gate lock of St. Mark's church, and of all the others. The Circuit Court reporter, in reporting the case, says, however, (see *Legal Intelligencer*, vol. xviii, p. 293:) "And yet undoubtedly to the eye of high inventive genius, *the finished production of Sherwood was visible in nearly every one of these ruder productions.* It required but the vital spark of genius to kindle the train, and to convert, in an instant, the manufacture designed for one purpose, into an object applicable to quite another." The question, of course, was one, in a large degree, of inspection. The locks which were exhibited below, having been made exhibits in the case, were now all exhibited here.

The Circuit Court entirely sustained Sherwood's claim; remarking that, although the makers of these other locks were *near* inventing the "double face," and might have done so, if they had only thought of it, yet that these persons had not actually invented it, or certainly had not so done it as to make their discovery practically useful. The testimony of the experts, the court conceived, "when analyzed, amounted to this, and no more: that these gate locks, being covered on the inside, might, by a little change, have been made into Janus-faced locks, though not so intended by the maker," a fact which was now apparent to any mechanic who had the patented invention before him.

The injunction prayed for was accordingly granted, and a reference for an account ordered. The injunction restrained the defendants from "making, constructing, vending, or using in any way the said invention and improvements, or either of them, or any part thereof, mentioned and described in the said patent."

Upon the coming in of the account as settled by the master, the account being settled in part *upon proofs adduced by the complainants as to the fact and extent of the defendants' manufacture of these locks, the original admission being apparently not relied on*, it appeared that the *net* profits upon all the locks, (*including every part of the locks,*) which the defendants made or sold, were \$13,282.92: The complainants claimed this entire sum; and, indeed, that it should be "trebled." The defendants denied that they were liable to profits on *the whole* lock, or for any profits except those properly

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springing from the *case* of the lock ; that part of it alone of which Sherwood claimed to be the inventor, and of which, notwithstanding their resistance, he had just been declared by the court the rightful patentee. They contended that the court should apportion this sum of \$13,282.92, reported as their profits, to the different *parts* of the lock ; the *profits* on each part being fixed on an arithmetical proportion to the *cost* of each. The account, then, would stand thus :

Profits on the <i>case</i> (the "improvement" for which Sherwood got his patent)	\$3,123 48
" latch and keeper.....	1,221 53
" other parts of the lock.....	4,577 01
" trimmings.....	4,360 90
	<hr/>
	\$13,282 92

The said Circuit Court, however, was not of this opinion ; conceiving that although a patentee might describe his invention as an *improvement*, still, if the machine constituted a distinct machine—a specific article known in the market—on account of its peculiar functions, the measure of damages for infringement was the profit on the whole machine. The view was thus set forth by the judge delivering the opinion of that court :

" The great question recurs : Is this Janus-faced lock a peculiar and distinct machine, introduced into market as a cheaper and better article than other machines without the peculiar characteristic of the patented one ? Does the value of the patent to its owners consist in the close monopoly of the right to make and sell this species of lock as one individual machine ? Has it peculiar characteristics which distinguish it from other machines of the same genus, and which gave it a peculiar value in the market ? If so, the complainants have a right to demand that the defendants, having infringed their exclusive right to make and sell this peculiar machine or manufacture, are justly liable to refund all the net profits made by such infringement. If, on the contrary, the patent is for some addition or improvement on an old and well-known implement, or some separate part or device thereof of small importance compared with the whole, if the license to use the improvement or addition was sold as separate and distinct from the whole machine, the measure of damage would be the price of a license, and not the profit made by the exclusive right to make and sell the whole machine."

[The Circuit Court next stated that court's idea as to the originality and merits of the invention, and continued:]

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"The claim of the Sherwood patent was, for 'making the case of door-locks and latches double-faced, or so finished that either side may be used for the outside.' The arrangements of the internal parts of the lock, and devices necessary to such a lock, are set forth in the specification. They were rather complex, and required that, in order to change the lock from a right-hand to a left-hand lock, it should be opened and some change be made in the position and arrangement of the internal parts. For the purpose of the present discussion it is unnecessary to describe these devices. The name 'Janus-faced' locks was given to this machine to distinguish it from others which had not its peculiar qualities.

"Now, it is evident, that although the patent of Sherwood may be said to be for an improvement in the manufacture of locks, a well known implement or machine; nevertheless, the lock contrived by him was a new and distinct species, having certain qualities differing from all other locks; that the Janus-faced lock is a specific article, (although of the genus lock,) known in the market, having peculiar value; and that the value of the monopoly granted by the patent consisted in the exclusive right to manufacture this peculiar machine without any competition, and have all the profits of such a monopoly. The respondents have made large gains by trespassing on the rights of the complainants. The profits they made by this trespass justly belong to the true owner. They have partaken equally with the complainants in the profits of the monopoly granted to them alone, without license, and in defiance of their rights. The only measure of the redress to which the complainants are entitled is an account of the actual profits made by respondents. The machine being a *unit*—a specific article well known in the market, having peculiar value because of the patentee's discovery or invention—the attempt to arbitrarily divide the profits of the monopoly of the whole machine among its parts is without precedent, and receives no countenance from the case of *Seymour v. McCormick*, 16 How., 480, which has been relied on for an opposite idea."

The court accordingly confirmed the master's report giving to the complainants the whole profits, \$13,282.92; and decree was entered accordingly.

Appeal to this court now brought before it—

1. The originality of Sherwood's invention as set forth (*ante*, p. 27) in his *first* claim—the claim, to wit, in these words: "What I claim as my invention, and for which I desire an exclusive patent, is making the cases of door-locks and latches double-faced,

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or so finished that either side may be used for the outside, in order that the same lock or cased fastening may answer for a right or left-hand door, substantially as described."

2. The correctness of the idea of *unity* in machines as held, *apparently, from this record*, by the court below.

The case was argued by *Mr. Gifford for the appellant, and by Messrs. Browning and Bakewell, contra.*

Mr. Justice MILLER delivered the opinion of the court:

It is the first claim as set forth which defendants charge to be invalid for want of novelty, and in this we think they are sustained by the testimony.

Indeed it may be doubted if the making of the case which incloses the internal works of the lock, with two faces just alike, and so well finished off in point of style that either side may be presented outwards, is a matter which could be patented, if no locks with such cases had ever been made before. But we are not called on to decide this point, and therefore pass it without further comment.

Several locks were produced on the trial below, and were shown to us here—being made exhibits by the record—which we are satisfied are the same in principle as the double faces of the Sherwood lock. Two of these locks are from the gates of the New York city hall. They are cased both sides alike, inclosing the internal works completely, and are so finished that one side may be presented outward as well as the other, and the locks can be applied to a door swinging from right to left, or from left to right. Locks from the city hospitals, having the double-faced case, both sides alike, have also been produced, and one from the entrance gate of St. Mark's church. A lock from the custom-house is shown, which has the double-faced case, both sides alike, and which, by being turned laterally, can be used for a door opening either to the right or left, without even turning the keyhole upside down. These locks are all proven to have been in use several years before Sherwood set up any claim to his invention. They are taken from the most public places in the great commercial city of the Union. These facts are incompatible with the claim of novelty on the part of Sherwood for this part of his patent.

As to the two remaining claims in the schedule accompanying the patent, it appears clearly that they were never infringed by defendants. In fact no locks were ever made with the particular internal arrangements as to bolts, latches, &c., specified in Sherwood's patent, except one or two by Sherwood.

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Very shortly after he obtained his patent, one Calvin Adams made an improvement upon it, which entirely superseded the use of the specific internal arrangement claimed by Sherwood in his invention. Combining this improvement with the double-faced case of Sherwood, Adams made a lock which has ever since been known as the Janus-faced lock, and which is the lock manufactured by complainants, of whom Mr. Adams is one.

It is not shown by any proof in the case that defendants ever used any part of Sherwood's patent, except the double-faced casting. Nor is it seriously claimed in argument that they did. But it is urged that this double-faced case, when used in connection with a latch or bolt and keeper, susceptible of such an arrangement that it may be placed upon a door opening either to the right or left, constitutes a unit, and the real invention of Sherwood, which is infringed by the defendants.

This mode of viewing the matter cannot be admitted. Sherwood claims that he is the inventor of three distinct parts going to make up his lock, which thus made up answers a certain purpose, namely, a lock capable of being applied indifferently to a door opening from the right or left. Two of these claims have been long since superseded by other improvements, and abandoned by everybody, and have never been used by the defendants. The other claim which they have used is found to be invalid for want of novelty. What is left of the Sherwood patent? It is clear that no part of the patent which is valid has been used by defendants, and they cannot be made infringers by an argument that mingles the valid and invalid parts of a patent, and calls it a unit; and then claims that defendants are infringers because they have used one part of this unit, although it was a part as to which the patent is void.

It therefore appears that, in point of fact, the defendants have not infringed the Sherwood patent, and if we were unembarrassed by the pleadings, we should dismiss the bill with costs.

But the defendants have admitted in their answer that they did make locks as described in Sherwood's patent, and when they afterwards asked leave of the court to retract that admission and deny the infringement, the court refused such permission. This request was made after the issue was made up, after much testimony had been taken, and its object was to deny a fact previously admitted under oath. It was a matter in the discretion of the Circuit Court, and we are not disposed to review its action on that subject here, under these circumstances, if, indeed, it can be done under any.

An effort has been made by counsel to show that this admission

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has been waived, by the act of plaintiffs, in going into the proofs, and otherwise treating it as an open question. But this would violate a principle of universal application, both in proceedings at common law and in chancery, to wit, that the proofs must correspond with the allegations. It would be subversive of all sound practice, and tend largely to defeat the ends of justice, if the court should refuse to accept a fact as settled which is distinctly alleged in the bill and admitted in the answer. *Crockett v. Lee*, 7 Wheaton, 522.

The fact that the defendants did manufacture and sell locks of the character of those patented by Sherwood, must be accepted as established in this case by the pleadings. The admission, however, need go no further than its terms necessarily imply. The language of the admission is satisfied by assuming that the smallest number of *locks* were made, consistent with the use of that word in the plural, and with the use by defendants of any part of the patent which is valid.

The Circuit Court, by its decree, ordered an injunction, restraining defendants from making, using, and vending said invention, or *any part thereof*, mentioned in said patent, and the payment by defendants to plaintiffs of \$13,282.92 profits made by them.

The result of the views we have expressed is, that this decree must be reversed, and the injunction modified so as to restrain the defendants from using any part of the Sherwood patent, except that embraced in the first claim of invention mentioned in the schedule attached to said patent, and a decree rendered for a nominal sum of one dollar for profits.

The appellants in this court must recover their costs.

DECREE ACCORDINGLY.

GODFREY v. EAMES.

(1 Wallace, 317.)

1. If an applicant for a patent choose to withdraw his application for a patent, intending, at the time of such withdrawal, to file a new petition, and he accordingly does so, the two petitions are to be considered as parts of the same transaction, and both as constituting one continuous application, within the meaning of the seventh sections of the patent acts of 1836 and 1839. CLIFFORD, J., dissenting.
2. The question of the continuity of the application is a question to be submitted to the jury.

THE patent act of 1836 provides, (§ 7, 5 Stat. at Large, 119,) that on the filing of an application for a patent, "the Commissioner shall make or cause to be made an examination of the alleged

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new invention or discovery, and if on any such examination it shall *not* appear to the Commissioner that the same had been in public use or on sale with the applicant's consent or allowance prior to the application, it shall be his duty to issue a patent therefor, but whenever on such examination it shall appear to the Commissioner that the applicant was not the original and first inventor or discoverer thereof, or that what is claimed as new had before been invented or discovered, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him briefly such information and references as may be useful in judging of the propriety of *renewing his application*, or of altering his specification to embrace only that part of the invention or discovery which is new.

"In every such case," the act goes on to say, "*if the applicant shall elect to withdraw his application*, relinquishing his claim to the model, he shall be entitled to receive back \$20, part of the duty required by this act, on filing a notice in writing of such election in the Patent Office. But if the applicant in such case shall persist in his claim for a patent, with or without any alteration of his specification, he shall be required to make oath or affirmation anew, in manner aforesaid, and if the specification or claim shall not have been so modified, as in the opinion of the Commissioner shall entitle the applicant to a patent, he may on appeal, and upon request in writing, have the decision of a board of examiners," &c.

A subsequent act—an act of 1839—(§ 7, 5 Stat. at Large, 354,) provides that those who shall have purchased, sold, or made the thing patented, "prior to the application of the inventor or discoverer for a patent, shall be held to possess the right to use and vend to others to be used" the same; and that "no patent shall be held to be invalid by reason of such purchase, sale, or use, prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use has been *for more than two years prior to such application for a patent*."

With these enactments in force, Godfrey, on the 31st January, 1855, filed an application for a patent for boot-trees. This application the Commissioner, on the 17th May, 1855, rejected for want of novelty. On the 24th April, 1857, within the time required by the rules, Godfrey submitted his case again. The old application was withdrawn, and a new one filed, *simultaneously*; the withdrawal fee of \$20 going to make part of the new application fee of \$30, and not in fact being received by the applicant. These different applications were made through different attorneys, and the

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description of invention, the claims of novelty, and the models, were in some respects different. It was admitted, however, at the bar, "that that which was finally patented might, if it had been properly introduced, have been engrafted as an amendment to the first application." A patent was issued March 2d, 1858.

It was part of the case "that the patentee, in the summer and fall of 1854, and since, publicly manufactured and sold boot-trees containing his alleged invention."

On a suit by the patentee, Godfrey, in the Circuit Court for the District of Massachusetts, against Eames, for the use of the boot-tree patented, the question was whether Godfrey had forfeited his patent by more than two years' public use or sale of his invention prior to his application. The court below instructed the jury that he had, and, accordingly, that the plaintiff could not recover. The correctness of this instruction was the matter now before this court on error.

Mr. Causten Browne, for the plaintiff in error: The proceeding of Godfrey was in pursuance of a settled practice sanctioned by the Patent Office, and amounting simply to amendment and rehearing, with \$10 additional fee. From the spring of 1855 (only a few months after the introduction of the invention into use) until the grant of the patent, there was, in fact, never a moment when the inventor was not applying to the Commissioner for his patent. The case is one of two consecutive applications (no time intervening) for patent for an invention. Why is the patent declared invalid upon the ground that the latter one—that which immediately preceded the grant—is the only one to which the statute relates?

There is no sufficient ground for such distinction upon the language of the statute, interpreted with reference to its reason and policy.

The provision of the act has been construed liberally to uphold the patent. *Pennock v. Dialogue*, 2 Peters, 18. The terms "his application for patent" mean not any particular paper application, but his applying, his making an application, his preferring a demand for a patent for his invention as new and useful.

Considered with reference to the policy of this provision, it is still more clear that it will not bear the construction given to it in this case by the court below. This policy was, that at as early a period as possible, having due regard to the rights of the inventor, the public should be put in possession of the best mode of practising the invention, by the deposit in the Patent Office of an open

Argument for the plaintiff in error.

description thereof by the inventor. *Pennock v. Dialogue*, 2 Peters, 18; *Ryan v. Goodwin*, 3 Sumner, 518; *Sparkman v. Higgins*, 1 Blatchford, 208. This description being lodged, together with demand for patent, the public were secure of the means of practising the invention when the exclusive right of the inventor should terminate, and the inventor was secure of his protection *unless he abandoned the pursuit of it*. Undoubtedly after an inventor has filed his application for patent, he may so conduct himself as to show an abandonment of it. If rejected, he may allow the rejection to stand so long as to show, itself or with other circumstances, an acquiescence therein and a final relinquishment of his claim. But having once filed an application, given the details of his invention to the public knowledge, and asserted his claim to a patent, he has satisfied the reasons of the law of 1836; and although he should afterwards withdraw that application, and *some time should elapse* before he renewed it, it is a question for the jury whether he has abandoned his claim to a patent, on which question the fact of withdrawal is evidence only, to be weighed with other evidence. But in this case, although *no time intervened*, the court peremptorily directed the jury to find for the defendant.

2. If, indeed, the application was to patent something *not existing* in the first application, it cannot be considered a continuance of that application. But the fact that he changed his claim, or other part of his description, does not make it a different application, nor that he submitted new drawings, nor that he submitted a new model, if the drawings and model show a machine substantially the same as before in construction and mode of operation. The same invention is disclosed in each, and might have been fully described and claimed in the first application, just as a reissue is a patent for the same invention as the original patent, if it was disclosed in the original application, and might have been then fully described and claimed. If the patentee in this case could have reissued a patent taken upon his original description and claim, so as to insert the present description and claim, the Commissioner could have allowed a like substitution by way of amendment. A patentee is presumed to intend to claim all that is new with him. If it appears that the *thing* on which a patent was sought was the same in the two cases, taking the model, description, and drawings together, then it is true that the inventor did, in 1855, put the public in possession of his invention, and of the best mode of practising it, and has ever since persisted in claiming a patent therefor; and the policy of the law, if rightly stated above, is satisfied.

Argument for the defendant in error.

Mr. Brooks, for the defendant in error: The real question presented is, *What became* of this application for a patent, which had "been once rejected," but which was entitled to a re-examination?" Did the applicant "PERSIST" in his claim for a patent, with or without any alteration of his specification?" "*His claim*" for a patent must, we suppose, be held to refer to the claim or application then before the Patent Office, and which had been once rejected. None other had been made, and none other could be persisted in. He did not persist in such claim; he did not ask for a "re-examination" of his application, (the "renewing his application" mentioned in the act of 1836;) but he took the opposite alternative course authorized by that statute, (though not named by the Commissioner of Patents,) viz, he *elected to withdraw his application*, and receive the return fee of \$20. Having made such election, he, in fact, did *withdraw his said application* on the 24th April, 1857, under the act of 1836, and did receive back the return fee; and the "*said application*" then withdrawn has never since been the subject of any action whatever anywhere.

His proceeding is analogous to a discontinuance by a plaintiff in a court of law, and a commencement of another suit on the same day, in case the claims of invention and the causes of action were in each case the same. In both instances one proceeding is ended and another is begun, even though both depended on the same ground precisely. The case is different where only an amendment is made, and the same suit is prosecuted in an amended form, without new process or new papers, or even loss of time.

Now, it is a familiar principle that an action at law must be commenced within the period limited for that purpose; and, if not so brought, it is not aided by the fact that another suit had been previously commenced within such time, and had been discontinued or dismissed. Were it otherwise, stale demands might be kept alive forever by means of suits not brought to trial. So in this case, if the doctrine of the plaintiff in error is correct, an inventor has it in his power, after putting his invention into public use, to apply for a patent, and taking care, in case of one rejection, to withdraw, and repeat the experiment *toties quoties*, he thus may, if finally successful, prolong the period of enjoyment much beyond that prescribed by law. In fact, if this view of the law is sanctioned by this court, it becomes the interest of inventors to delay the grant of patents as long as possible by this very method, in order to prolong the term of enjoyment. It is obvious, however, that the patent here in suit, like all others, was and could be founded upon one application only; and it appears that such

Argument for the defendant in error.

application was made (April 24, 1857) more than two years after the public use and sale by the inventor of the alleged invention, whereby the said patent was made invalid.

We do not put our defense upon the ground that the withdrawal of the first application was an abandonment of his invention. It was merely an abandonment of *that application*, and left him at liberty to make other applications as like or unlike that as he pleased ; but inasmuch as, in cases of withdrawal, the model and application papers are retained in the Patent Office, and further proceedings to obtain a patent require new papers, differing from former ones at least in time of execution and filing, and also perhaps presented to officers not before having acted in the matter, a first application cannot, in the nature of things, be the second, nor a second be also the first.

It will not, of course, be claimed that what was done in April, 1857, amounted merely to an amendment of his first specification, by writing it out *anew*, as is sometimes allowed to be done. For that purpose, no second fee or new petition, oath, or model was necessary ; and, in such case, no return of fee could have been allowed.

It is made the duty of the Commissioner, by the act of 1836, to issue a patent upon an application duly filed, after due examination, if, among other things, it shall not appear that the alleged new invention had been in public use or on sale, &c., &c., (more than two years) "prior to *the application*." "The application" must mean the one brought before him for examination, and not some previous application never perhaps known to him. The Commissioner has no judicial discretion in receiving an application. The power of making one is given absolutely to the inventor. Can it, then, be pretended that the Commissioner would or lawfully could have granted the patent in this case had he known the fact of the public use and sale of the invention in 1854? "The application" means the several papers required by law to entitle an inventor to an examination of his alleged invention, and which, if the patent is granted, are annexed to the letters patent to distinguish it and fix its character. In this case, these papers were those filed in 1857, and none other ; so that the prior application of 1855 is wholly immaterial, except upon the question of abandonment, which is not raised at all in this case. The applicant voluntarily substituted one application for another, as he says. If both were the same, his motive could not be one favored by the policy of the patent laws. If they were not the same, and he elected to give up one for the other, and did so, and got the benefit

Opinion of the court.

of so doing, he cannot rely now on both. If, as we understand the law, the specification makes the patent what it is, it is manifest that the application of January, 1855, was not patented in the grant made in March, 1858.

[2. The counsel then contended that in fact the object for which a patent was applied for in 1855, was one so different from that one for which a patent did issue in 1858, that they could not be considered in substance the same thing; a matter involving a question of fact only.]

Mr. Justice SWAYNE, after quoting the statutes of 1836 and 1839, delivered the opinion of the court.*

In this case the patentee filed his application in the Patent Office on the 31st of January, 1855, and from that time it was constantly before the office, until the patent was issued on the 2d of March, 1858, except that on the 24th of April, 1857, it was withdrawn and refiled on the same day with an amended specification. It was admitted and proved "that the patentee, in the summer and fall of 1854, and since, publicly manufactured and sold boot-trees containing his alleged invention." The sales and use as thus shown were less than two years before the first application was filed, and hence, according to the letter of the act of 1839, cannot affect the validity of the patent.

In answer to this, two propositions are relied upon by the plaintiff in error:

1. It is said the original and the renewed application are for patents for different things.

Both specifications are before us, and it is our duty to construe them.

The act of 1836 gives the applicant a right to change his specification after receiving the suggestions of the Commissioner. Doubtless, this right exists and may be exercised independently of such suggestions, at any time before the Commissioner has given his formal judgment upon the application; and the inventor may "persist in his application for a patent, with or without any alteration of his specification." A change in the specification as filed in the first instance, or the subsequent filing of a new one, whereby a patent is still sought for the substance of the invention as originally claimed, or part of it, cannot in anywise affect the sufficiency of the original application or the legal consequences flowing from

* Mr. Chief Justice Taney and Messrs. Justices Wayne, Grier, and Field had not been present at the argument.

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it. To produce that result the new or amended specification must be intended to serve as the basis of a patent for a distinct and different invention, and one not contemplated by the specification, as submitted at the outset.

We are satisfied that there was here such substantial identity in the two specifications as brings the case within the rule thus laid down. This objection cannot be sustained.

2. It is said that the withdrawal of the first application broke the continuity of the claim, and that the case stands as if the only application were the one of the 24th of April, 1857.

This question could not have arisen upon the same state of facts, under the act of 1836. According to that act, and the prior legislation of Congress, the public use or sale by the inventor of the thing invented, at any time before the application, was fatal to his claim for a patent. The act of 1839 relieved him from this consequence, and introduced a new and more liberal policy. It gave him the right to apply for a patent at any time within two years after the use and sale of his invention, "except on proof of the abandonment of such invention to the public." The provision in the act of 1836, allowing the withdrawal of the application, was intended only to provide for the disposition in such cases of the duty which had been deposited, and to enable the applicant to resume a part of it upon the condition prescribed; it is silent as to everything beyond this, and we do not feel authorized to interpolate into the statute so important a qualification. The new provision in the act of 1839, is wholly independent of the act of 1836; by necessary implication it repeals the conflicting provision upon the same subject in the earlier act. It must be examined by its own light, and so construed as to give the fullest effect to the beneficent purpose of the legislature.

In our judgment, if a party choose to withdraw his application for a patent, and pay the forfeit, intending at the time of such withdrawal to file a new petition, and he accordingly do so, the two petitions are to be considered as parts of the same transaction, and both as constituting one continuous application, within the meaning of the law.

The question of the continuity of the application should have been submitted to the jury. In directing them to return a verdict for the defendant, we think the learned judge who tried the case in the court below committed an error.

Mr. Justice CLIFFORD dissents.

JUDGMENT REVERSED AND VENIRE DE NOVO AWARDED.

Statement of the case.

BLOOMER v. MILLINGER.

(1 Wallace, 340.)

1. A grant of a right by a patentee to make and use, and vend to others to be used, a patented machine, within a term for which it has been granted, will give the purchaser of machines from such grantee the right to use the *machine patented* as long as the machine itself lasts; nor will this right to use a machine cease because an extension of the patent, not provided for when the patentee made his grant, has since been allowed, and the machine sold has lasted and is used by the purchaser within the term of time covered by this extension: the rule being distinguishable from that applied to the assignee of the right to *make and vend* the thing patented, who holds a portion of the franchise which the patent confers, and whose right, of course, terminates with the term of the patent, unless there is a stipulation to the contrary.
2. *Bloomer v. McQuewan*, 14 Howard, 539, and *Chaffee v. The Boston Belting Company*, 22 Id., 217, approved.
3. How far parol proof may be introduced to show verbal agreements of the parties at the time when deeds were executed, and so to prove mistake or fraud in not executing what it was understood should be executed. The question raised on argument, but not decided by the court.

BLOOMER, the appellant here, filed a bill in equity in the Circuit Court for the Western District of Pennsylvania. He set forth in it that he was owner of the exclusive right to make and use, and vend to others to be used, within the county of Alleghany, in Pennsylvania, the patented planing machine of Woodworth; that subsequently to the 27th December, 1849, and about the 1st January, 1850, the respondent, Millinger, had put in operation in that county, three of these machines, and was continuing to use them without any lawful authority. The prayer was for an account, and for an injunction against the use of these three machines.

The case, as appearing by the bill and answer, was thus:

On the 27th December, 1828, letters patent were granted to Woodworth for an improved planing machine for fourteen years; that is to say, up to 27th December, 1842.

On the 16th November, 1842, (Woodworth himself being dead, but his estate being represented by an administrator,) an extension of the patent was granted by the *Commissioner or Board of Commissioners of Patents*, for the term of *seven years* from the expiration of the original patent; that is to say, *from the 27th December, 1842, to the 27th of December, 1849*.

On the 2d June, 1843, the administrator of Woodworth, by deed (called in the argument Exhibit A) reciting "the extension of said letters patent for the term of *seven years* from and after the expiration of said patent," sold and conveyed to one *William Lippincott*, his heirs and assigns, the right to construct and use, and

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vend to others to construct and use, "during the *said extension*," the patented machine, within the county of Alleghany, in the State of Pennsylvania; covenanting that such right should be exclusive throughout the limits specified, during the "term aforesaid."

On the 26th February, 1845, *Congress*, by act, granted an extension of the patent for the term of *seven years from the expiration of the extension granted by the Commissioner*; and on the 14th of March following, the administrator sold and conveyed his interest in the "letters patent and the franchises thereby granted and secured," for "the said term of *seven years created and extended by Congress*," to one Wilson; a second deed—not specially important in the case, but to the same effect exactly, that is to say, for the term of seven years created and extended by the said *act of Congress*—being made July 9, 1845, and after the patent had been surrendered for a defective specification.

Wilson was thus invested with the interest under the second or Congressional extension, but with nothing more.

In this state of things, *William Lippincott*, still holding his right under the deed of 2d June, 1843, (called Exhibit A,) for Alleghany county, under the extension granted by the *Commissioner*, conveyed it, on the 10th April, 1846, to James Lippincott and one Millinger, the present defendant; and by a second instrument, (called Exhibit B,) dated three days afterwards, 13th April, 1846, the *administrator*, reciting that in consequence of the surrender and renewal of the patent, doubts had arisen as to rights given by instruments executed prior to the reissue, licensed and empowered this same Lippincott and Millinger "to construct and use exclusively the patented machine in the county of Alleghany, and also within said territory to license and empower any other person or persons to construct and use machines *for the term of time for which the patent was extended by the Board of Commissioners hereinbefore referred to; being for the term of seven years and no longer from and after the expiration of the original term of fourteen years.*" The deed declared that the administrator intended thereby "to confirm all right, title, and interest to construct and use, and the right to license others to construct and use, said machines," which had been granted by the *indenture of 2d June, 1843*, (Exhibit A,) and concludes thus: "No other, or greater, or other or further grant or conveyance is hereby made, &c., than was granted by the indenture aforesaid, and upon the same terms and conditions."

Lippincott and Millinger were thus vested with the right for

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Alleghany county under the Commissioner's extension, in such way as given by the deeds already mentioned.

On the 24th June, 1847, the administrator granted to *Bloomer* (the complainant) his "full consent, permission, and license to construct and use, and vend to others to construct and use," the patented invention "during *the two extensions*," within that part of Pennsylvania, west of the Alleghany mountains, "excepting Alleghany county, for the first extension;" this "first extension" being that which had been previously granted to Lippincott and Millinger, the respondent in this suit. And on the 2d September, 1847, this same Lippincott and Millinger, by indorsement upon the administrator's deed of 13th April, 1846, conveying it to them, conveyed to him, *Bloomer* aforesaid, whatever rights in the patent they held; *Bloomer*, however, stipulating that he would in no way interfere with certain machines mentioned in the transfer as belonging, &c., one to A., and one to B., &c., "nor interfere in any manner with the use of the *three* machines now erected, and in operation and use by the said *Millinger*; but the right, title, and use of the machines of the persons hereinbefore named, shall remain and be in them or their assigns for and during the time limited by the *written instruments*."

In addition to this deed indorsed—from Lippincott and Millinger to *Bloomer*, of 2d September, 1847—these same parties, Lippincott and Millinger, executed on the 10th January, 1848, still another deed to *Bloomer*, by which they assigned to him "all their right, title, and interest in and to the said planing patents . . . within said county of Alleghany, as fully as the same is vested in us by force of the several hereinbefore recited conveyances,* and giving to the said *Bloomer* and his assigns full power and authority to construct and use, and vend to others to construct and use, said patent as aforesaid, within said county . . . for and during the full end and term of time unexpired and yet to come of said extension of said patent, to wit, until the 27th day of December, 1849."

And on the same day, *Bloomer*, the complainant, executed a deed, giving to Millinger, the respondent, "his full consent, and permission, and license to construct and use, and vend to others to construct and use, *during the first extension herein set forth*, to wit, from the 27th day of December, 1842, until the 27th day of December, 1849, the right to use the said renewed patent, and to vend to others to use *three* planing machines upon the principle, plan,

* These were the deeds of June 2, 1843, (Exhibit A,) that of 10th April, 1846, and that of 13th April, 1848, (Exhibit B.)

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and description of the said renewed patent and amended specifications, within the county of Alleghany." *How far Millinger had accepted this deed was not so plain.*"

In addition to the defense, as already indicated, from the pleadings, Millinger, the respondent, by his answer, averred and offered to prove that when the reassignment of 10th January, 1848, from Lippincott and himself to Bloomer, was executed, Bloomer agreed that he would execute to Millinger "a deed of assignment of the right to the said extension, so far as regarded the three machines," and "the said deed of assignment from the said Bloomer"—Millinger's answer went on to say—"was to be executed by the two parties, and was to be so worded as that respondent should have all the rights and privileges, and was to stand precisely in the position as to the rights, enjoyments, and privileges, as respected the patent right to said three machines, as if the assignment from respondent and Lippincott had never been made, and so as to place the respondent in the same situation as he would have stood under the assignment of the 2d of June, 1843, or by any other agreement between the parties, and to all the benefit of any renewals to which respondent would have been entitled under the assignment of said extension by the Commissioner of Patents, on the 2d of June, 1843, or any other agreement between the parties;" that the plaintiff, in fulfillment of the verbal agreement, did execute a deed, left it at the place of business of the respondent, and that he refused to accept or sign the same, because it did not carry out the alleged agreement.

Some parol evidence was taken on behalf of the respondent, to substantiate these allegations. But the complainant's general right, and the use of the three machines by the respondent, Millinger, *after the expiration of the term of extension granted by the Commissioner*, was not denied.

The court below dismissed the bill; and on appeal here two principal questions—in substance these—were made:

1. Whether, under the deeds of June 23d, 1843, (Exhibit A,) conveying to the assignor of Millinger, in such strict terms, a right to the extension of the patent for but *seven years*, and the deeds of 10th and 13th April, 1846, (Exhibit B,) by which this right was conveyed, in such like terms, to Millinger—taken in connection with Bloomer's stipulation of 13th April, 1846, and his deed of 10th January, 1848, that Millinger should use his three machines during the said term for which the patent had been extended by the Commissioner—Millinger could use his machines

Argument for the appellant.

after the expiration of that term, and during the new term for which an extension had been granted by Congress.

2. If he could not do so under the deeds as set forth in the pleadings, he could introduce parol evidence to show what he alleged in his answer, and offered to prove, as to the license intended to have been executed by Bloomer on the 10th January, 1848.

*Messrs. Seward, Norton, and Blatchford, for the appellant,
Bloomer:*

1. The intent with which the agreement was made is but a convertible term for its legal operation, and that legal operation is to be affixed by law to the language used by the parties, irrespective of the intent with which they used such language. The inquiry never arises upon the evidence, "what did the parties intend to do?" if the written agreement which they made is susceptible of legal interpretation. The conclusion is that they intended just what the law interpreting their agreement says that they have done. If this rule be so, it excludes from the consideration of the court the parol evidence introduced by the respondent, and leaves for the adjudication of the court the single question of law, viz: "Has the respondent, under these instruments, either by their proper interpretation or by operation of general law, the right to continue to use, *during the extension of the patent by Congress*, the three machines which he constructed and was lawfully in use of during the extension by the *Commissioners?*"

2. The fact that the subject of the contract is a right in or an interest under a patent does not take the case out of the law applicable to the law of contracts generally. The owner of a patent may make any agreement with regard to its enjoyment that he may make in regard to any other species of property. It is competent, therefore, for the owner of a patent right to carve out of his entire monopoly such fractional interest therein, either as to absolute right, or as to territorial extent, or as to duration of right, as he may see fit.

Applying this principle, it appears that the respondent never acquired, by voluntary grant from any of the owners of either the original or extended patent, any right to continue to use the thing patented during the extension of the patent *by Congress*. If there be language which can define the intent of the grantor to be that he parts with a right under his patent for a specified number of years only, that language will be found in both of the instruments under which the respondent was rightfully in use of his three ma-

Argument for the appellant.

chines during the first extension of the patent. In Exhibit A, the first instrument (that of 2d June, 1843) by the administrator to William Lippincott, the respondent's assignor, the grant was of a "right and license to construct, use, and vend to others to construct and use, *during the said extension of the aforesaid patent,*" that extension being the one granted by the Commissioners, and which expired on the 27th of December, 1849.

In the confirmatory instrument to the respondent, of the 13th of April, 1846, (known as Exhibit B,) which was intended to convey the right under the amended specification attached to the reissued patent, the language is, "doth license and empower for the term of time for which the patent was extended by the Board of Commissioners hereinbefore referred to, being for the term of seven years, and no longer, from the expiration of the original term of fourteen years."

Probably *Bloomer v. McQuewan*, 14 Howard, 550, decided by this court, will be relied on to support an opposite view. But we submit, *first*, that that case is inapplicable, and *second*, that it is not, under the circumstances of its decision, a binding authority.

I. The act of Congress places the case in the position in which it would have been had the patent been originally granted for twenty-eight years. If it had been so granted, what right would the respondent have acquired by virtue of Exhibits A and B, executed respectively in 1843 and 1846? Clearly the beneficial enjoyment of the patent for the period therein specified, expiring on the 27th of December, 1849, and nothing other or beyond. If he acquired any other or further right, he must have acquired it by virtue of some general law, and not by virtue of the contract, or of the act extending the patent. The respondent did not know, in 1843, when the first license was granted, that the patent would be extended by act of Congress, but he knew that it might be. He did know, in 1846, when the second license was executed, that the patent had been extended; and he accepted an instrument on that date, which expressed, by the use of proper language, the intention of the grantor to terminate the right granted on the 27th day of December, 1849.

The respondent never occupied, during the first term of the patent, the position of the defendant in *Bloomer v. McQuewan*; that is, he was not an "assignee" or "grantee" during the *original* term of the patent, of the right to use the thing patented.

By the patent act of 1836, sec. 18, it is provided that the benefit of the renewal by the Commissioner shall extend "to assignees and grantees of the right to use the thing patented, to the extent of

Argument for the appellant.

their respective interests therein." In *Wilson v. Rousseau*, 4 Howard, 646, it was the opinion of a majority of this court that without this provision "all rights of assignees or grantees, whether in a share of the patent, or to a specific portion of the territory held under it, terminate at the end of the fourteen years, and become reinvested in the patentee by the new grant." And, in construing this very act of 1845, Nelson, J., said in one case, *Gibson v. Gifford*, 1 Blatchford, 529: "If the extension for the second term had been absolute; that is, if there had been no reservation in the general act of 1836 in favor of assignees, as there is not in the special act of 1845, the court would not have entertained a doubt that the exclusive right to the invention during the second term would have been vested in the administrator." So, also, in another case, *Gibson v. Cook*, 2 Blatchford, 144, where the assignments were similar to Exhibits A and B, he held that the defendant had no right to continue to use the machines under the extension by act of Congress. This view has been confirmed in other circuits.*

II. But it is submitted that *Bloomer v. McQuewan*, should be re-examined. The opinion of the court in that case was pronounced by the present chief justice, and was concurred in by Justices Catron, Daniel, and Grier. Justices Nelson and McLean dissented. Justices Wayne and Curtis did not sit. So that the decision was really that of less than half of the court, there having been one vacancy by the death of Justice McKinley. Justice McLean, at the close of his dissenting opinion, says: "Sustained by the authority of seven justices of this court, and by the argument of the Supreme Court above cited, which I think is unanswerable, I shall deem it to be my duty to bring the same question now decided, when it arises in my circuit, for the consideration and decision of a full bench." It cannot be presumptuous to ask the court to give to the question a new investigation, in order that it may be submitted for the consideration and decision of a *full bench*."

The counsel then examined the decision on principle and authority.

*In *Bloomer v. Stolley*, 5 McLean, 158, McLean, J., held that the defendant in that case acquired no right, under the act of Congress extending Woodworth's patent, to continue to use the machine which he had rightfully used during the second term of the patent. In *Mason v. Talman*, (decided in Rhode Island, July, 1850,) Woodbury and Pitman, JJ., followed the decision of Nelson and McLean, JJ., upon this point. The point was similarly decided by McKinney and McCaleb, JJ., in *Bloomer v. Vaught*, (in Louisiana, February, 1850,) by Ware, J., in *Woodworth v. Barber*, (in Maine, April, 1850,) and by Sprague, J., in *Woodworth v. Curtis*, (in Massachusetts, January, 1850.)

Opinion of the court.

Mr. Justice CLIFFORD, after stating the case, delivered the opinion of the court.

Counsel of the complainant concede that the machines were constructed and put in operation by the consent and license of the assignees of the patentees, and that the respondent had the full right to continue to use and operate the same throughout the entire period of the extension granted by the Commissioner of Patents. But they deny that he had any right to continue to use or operate them under the second extension, which was granted by the act of Congress. All of those machines were constructed and put in operation before the act of Congress was passed, and of course under an authority founded upon the patent as it existed at the time the authority was conferred. Regarding the transaction in that point of view, the argument is, that the respondent could not lawfully continue to use and operate the machines under the extension granted by Congress, inasmuch as such a use of the invention was not in the contemplation of the parties when the respondent was authorized to construct them and put them in operation.

Two principal defenses were set up by the respondent in the court below.

First, he insisted that inasmuch as he constructed the machines and put them in operation under the authority of the patentee or his assigns, with the right to continue to use and operate them during the entire term of the patent as it was then granted, he cannot now be deprived of the right to use the property which he was thus induced to purchase, and which he in that manner lawfully acquired.

Secondly, he insisted that the complainant, at the time the respondent transferred to him the right he acquired under the assignment to him of the 10th of April, 1846, agreed that he, the complainant, would execute to him, the respondent, a deed of assignment of the right to the extension in question, so far as respects the three machines now in controversy; and he insisted that parol proofs were admissible and sufficient to establish the fact of such an agreement. On the other hand, the complainant denies that any such agreement was ever made, and he also insists that parol proofs are not admissible to establish such a theory.

Confessedly, the latter question is one of difficulty, under the circumstances, but it is wholly unnecessary to decide it in this case, as the respondent was and is clearly entitled to judgment upon the other ground. He constructed his machines, or caused them to be constructed, under the authority of the patentee or his assigns, and consequently must be regarded in the same light as a grantee or

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assignee under those who had the legal control of the patent. Builders of machines, under such circumstances, have the same rights as grantees or assignees.

When the respondent had purchased the right to construct the machines and operate them during the lifetime of the patent as then existing, and had actually constructed the machines under such authority, and put them in operation, he had then acquired full dominion over the property of the machines, and an absolute and unrestricted right to use and operate them until they were worn out.

Patentees acquire the exclusive right to make and use, and vend to others to be used, their patented inventions for the period of time specified in the patent, but when they have made and vended to others to be used one or more of the things patented, to that extent they have parted with their exclusive right. They are entitled to but one royalty for a patented machine, and consequently when a patentee has himself constructed the machine and sold it, or authorized another to construct and sell it, or to construct and use and operate it, and the consideration has been paid to him for the right, he has then to that extent parted with his monopoly, and ceased to have any interest whatever in the machine so sold or so authorized to be constructed and operated. Where such circumstances appear, the owner of the machine, whether he built it or purchased it, if he has also acquired the right to use and operate it during the lifetime of the patent, may continue to use it until it is worn out, in spite of any and every extension subsequently obtained by the patentee or his assigns.

Provision is made by the eighteenth section of the act of the 4th of July, 1836, for the extension of patents beyond the time of their limitation. By the latter clause of that section the benefit of such renewal is expressly extended to assignees and grantees, of the right to use the thing patented, to the extent of their respective interests therein. 5 Stat. at Large, 125. Under that provision it has repeatedly been held by this court that a party who had purchased and was using a patented machine, during the original term for which the patent was granted, had a right to continue to use the same during the extension. *Wilson v. Rousseau*, 4 Howard, 646. Founded as that rule is upon the distinction between the grant of the right to make and vend the machine, and the grant of the right to use it, the justice of the case will always be obvious, if that distinction is kept in view and the rule itself is properly applied.

Purchasers of the exclusive privilege of making or vending the

Syllabus.

patented machine in a specified place, hold a portion of the franchise which the patent confers, and of course the interest which they acquire terminates at the time limited for its continuance by the law which created it, unless it is expressly stipulated to the contrary. But the purchaser of the implement or machine, for the purpose of using it in the ordinary pursuits of life, stands on different ground. Such certainly were the views of this court in the case of *Bloomer v. McQuewan*, 14 Howard, 549, where the whole subject was very fully considered. Attention is drawn to the fact that there was considerable diversity of opinion among the judges in disposing of that case, but the circumstance is entitled to no weight in this case, because the court has since unanimously affirmed the same rule. *Chaffee v. The Boston Belting Co.*, 22 Howard, 223. In the case last mentioned the court say, that when the patented machine rightfully passes from the patentee to the purchaser, or from any other person by him authorized to convey it, the machine is no longer within the limits of the monopoly. By a valid sale and purchase the patented machine becomes the private individual property of the purchaser, and is no longer specially protected by the laws of the United States, but by the laws of the State in which it is situated. Hence it is obvious, say the court, that if a person legally acquires a title to that which is the subject of letters patent, he may continue to use it until it is worn out, or he may repair it or improve upon it, as he pleases, in the same manner as if dealing with property of any other kind. Webster's Pat. Cases, 413, note p.

Considering that the question has been several times decided by this court, we do not think it necessary to pursue the investigation. The decree of the Circuit Court is therefore

AFFIRMED WITH COSTS.

TURRILL v. THE MICHIGAN SOUTHERN, &c., RAILROAD COMPANY.

(1 Wallace, 491.)

1. Patents for inventions are not to be treated as mere monopolies, and therefore as odious in the law, but are to receive a liberal construction, and under a fair application of the rule that they be construed *ut res magis valeat quam pereat*. Hence, where the "claim" immediately follows the description, it may be construed in connection with the explanations contained in the specification; and be restricted accordingly.
2. Where a plaintiff, having a patent for an improved machine, his "improvement" consisting in certain pieces of mechanism *described*, having *peculiar characteristics described*, the pieces of mechanism being combined by means *described* so as to produce a particular result *described*, an admission by him that pieces of mech-

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anism in their general nature like his, and used for "various purposes," were older than his invention, is not an admission that these machines were the same as his; and the fact whether they were or were not, is a question for the jury, and not for the court.

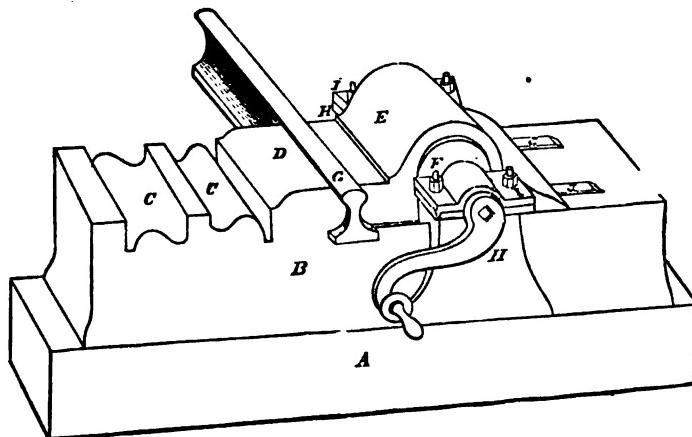
3. The patent granted, September 9th, 1856, to Cawood for an "improvement in the common anvil or swedge-block, for the purpose of welding up and re-forming the ends of railroad rails when they have exfoliated or become shattered from unequal wear, occasioned by the inequalities of the road," &c., is a patent in which special devices are described as combined and arranged in a particular manner, and as operating only in a special and peculiar way for a special purpose, and to effect a special result. It is not a claim for any kind of movable press-block, combined and operating in any way with any kind of fixed block to accomplish any purpose, or effect any kind of result.

THIS was a writ of error to the Circuit Court for the District of Michigan. The action was trespass on the case, brought against the Michigan Southern and Northern Indiana Railroad to recover damages for the alleged infringement of a patent; the defense having been want of originality in the invention.

The patent, which was granted originally to one Cawood, dated September 9th, 1856, was for "*a new and useful improvement in the common anvil or swedge-block, for the purpose of welding up and re-forming the ends of railroad rails when they have exfoliated or become shattered from unequal wear, occasioned by the inequalities of the road; six inches or so of the extreme end of the rail being frequently destroyed, while the remainder is perfectly sound.*"

The schedule ran as follows:

"I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part in this specification and giving a perspective view of the machine:



Statement of the case.

A representing the bed-sill on which the anvil is placed; B the anvil or swedge-block, of cast iron; C recesses, or dies across the face, the shape of the side of the rail; D solid block, making a part of anvil, with its side shaped to the side of the rail, while placed in its natural position; E a movable press-block, held down to anvil by dovetail tongues on the anvil and grooves in the movable press-block, and operated by two eccentric cams, F, back and forth, in a longitudinal direction, to press the rail together while forming its end, and with sufficient travel to extricate the rail without altering its vertical position; G a rail, of the T form, in its position between the press-blocks.

"I usually make my improved anvil and swedge-block of cast iron, between four and five feet long and sixteen inches across the face, with two forms or recesses C C at one end, right and left, of a form corresponding with the side of the rail. Close to these is cast a raised block D, nearly as high as the rail, and with its farthest edge also shaped to fit the side of the rail when it lays across the anvil in its natural position. Next this I attach to the face of the anvil, by dovetail tongues and grooves, or any other convenient manner, what I call a movable press-block E, with a similar but reverse-shaped edge, laying opposite the other, so as to inclose the rail between the two, as in the jaws of a vice. This block I work by two eccentric cams F on a shaft, which is attached to the anvil by two standards H H, with bearings I I, either cast on or bolted to the edge of the same, so that half a turn of the crank will move the press-block over a space a little more than the extreme width of the rail. The mode of using this machine is extremely simple and effective. A piece of iron (being of a size suitable to the deficiency of the rail) having been prepared and put in the fire, the rail being suspended by its middle to the level of the anvil, is brought to a welding heat, and then swung round from the fire in the space between the two blocks, where it is, by a half turn of the crank, pinched together by means of the cams F; the welding-piece is then laid on the top of the rail and welded to the rail in the usual way, and leveled up and shaped by a swedge, held by the smith, of the form of that section which projects above the blocks, thus accomplishing at one heat what usually requires three or more. Should any imperfections remain, which is not usual if the first operation is properly gone through with, they can be removed by proper hand swedges after placing the rail in the recesses C C for that purpose."

The claim was thus:

"I do not claim the anvil-block nor its recesses; but what I do

Statement of the case.

claim as my invention, and desire to secure by letters patent, is the movable press-block E, having its edge formed to the side of the rail G, in combination with another block D, with its edge of a similar but reversed form, (the movable blocks to be operated by two cams, F, or in any other convenient manner,) for the purpose of pressing between them a T or otherwise shaped rail, thereby greatly facilitating the difficult operation of welding and renewing the ends of such rails after they have been damaged, in the manner herein described and set forth."

Having put the patent in evidence, shown an assignment of it to the plaintiff, and otherwise made out a *prima facie* case, the plaintiff rested. The defendants then introduced models of certain machines, for the purpose of showing that the invention was not original. The models thus introduced were of the following machines: 1st. Of an angle-iron machine. 2d. Of an anchor machine. 3d. Of a bayonet machine. 4th. Of a machine patented in England to one Church.

On most or all of these, *movable and fixed blocks were used*; but it remained a question, to be solved by inspection, whether the *forms* of these blocks and the *manner* in which they were combined, and the *means* by which they were moved and held, were or were not adapted to the welding up and re-forming the ends of railroad rails when exfoliated or shattered from unequal wear. The plaintiff, however, *admitted*, his admission being, according to the bill of exceptions taken and sealed in the case, exactly in these words, "*that movable press-blocks, in combination with faces of various shapes, and used for various purposes, were older than the alleged invention of Cawood, the patentee.*"

The evidence being closed, the plaintiff requested the court to charge the jury "that the invention patented consisted of the movable press-block and the block D, in combination with the anvil or swedge-block B, described in said specification." This instruction the court refused, and charged essentially as follows:

"In the view which the court takes of the case, *there will be no question of fact for you to decide*. According to the construction which the court has heretofore given to the patent, and which it now repeats, the patentee claims as his invention the movable press-block E, having its edge formed to the side of the rail G, in combination with another block, D, the movable blocks to be operated by two cams, or in any other convenient manner. The specification shows that the block D is fixed and to be a part of the anvil or swedge-block, in combination with which, as well as

Statement of the case.

with the fixed block, the movable block is to be used. Movable press-blocks in *such* combinations, with faces of various shapes, and used for various purposes, it is clearly proved and *frankly admitted*, are greatly older than the alleged invention of the patentee. The models exhibited in evidence of the ‘angle-iron machine,’ the ‘anchor machine,’ the ‘bayonet machine,’ and those made from the descriptions contained in the English patent of Church, are only some of the examples of their use and application. The patentee therefore claims that of which he is not the inventor. This fact is fatal to the patent, and entitles the defendant, *as matter of law, to your verdict.*

If it be said that the claim is for the shape of the faces of the blocks, and the uses to which they are to be applied, the answers are:

“1st. A mere change of form is not a patentable subject.

“2d. The use of a machine or invention for a new purpose is also not patentable.

“3d. It was the duty of the patentee to describe clearly what he claims as his invention, so that it might be distinguished without doubt or difficulty from everything else to be used in connection with it. This has not been done. If the limited construction here under consideration be deemed the correct one, still this objection would be fatal, and your verdict the same. We are, however, satisfied that the true construction is the more comprehensive one, and that patentee claims the movable block in combination with the fixed one, and that the shape and proportions of the cheeks are only incidents and matters of detail.”

The plaintiff took exceptions to the following among other parts of the charge:

First. To so much as stated that “the movable press-blocks in such combination, with faces of various shapes, and used for various purposes, being greatly older than the alleged invention of the patentee, was fatal to the patent, and entitled the defendant, as a matter of law, to the verdict of the jury.”

Second. To so much as stated that, “in the view which the court takes of the case, there would be no question of fact for the jury to decide.”

The chief question, therefore, in error, was, whether the court had or had not decided a question of fact; and so withdrawn the case improperly from the jury; and this chief question involved, as a previous one, the question whether the court had or had not rightly construed the patent.

Argument for the plaintiff in error.

Mr. B. R. Curtis, for the plaintiff in error:

1. *As to the construction of the patent.* The claim is not one of *any kind* of movable press-block, combined and operating in *any* way, with *any* kind of fixed block, to accomplish *any* purpose. But it is a claim of *such* a movable press-block as is described, and *such* a movable fixed block as is described, arranged as described, and combined and operating in the particular way described, for the purpose of effecting the particular result indicated.

The patentee declares the sole *purpose* of the invention to be, “welding up and re-forming the ends of railroad rails, when they have become exfoliated or shattered;” and in describing the manner of constructing and using the machine, he shows it *to be designed for that purpose, and for that purpose only*. At the conclusion of the claim he again declares the object of the machine to be “the difficult operation of welding and renewing the ends of *such* rails” (*i. e.*, railroad rails) “after they have been damaged.”

So far as respects *the result* to be effected, it is clearly shown to be, that single, special, and peculiar result of so placing and holding railroad rails, as greatly to facilitate the operation of renewing the ends of such rails by welding.

It is equally clear, that what the patentee intended to include in his claim was not *any* press-block or *any* fixed block, but *the* press-block and *the* fixed block which he has described.

I. Because the patentee, at the beginning of his specification, after stating that he has invented a new and useful improvement, says: “And I do hereby declare that *the following is a full, clear, and exact description of the construction and operation of the same.*” When he comes to make his claim, it is but just to the patentee to believe that he does not intend to claim as his own anything which is entirely outside of what he has described as his invention.

II. Because the language of the claim itself is not extended to *any* movable or *any* press-block, but is clearly limited to “*the* movable press-block E” “and *the* block D”—thus identifying the two elements of the combination as being such a press-block and such a raised fixed block as he had previously described, and had shown on the drawings by the designation of those letters.

Nor is the mode of arranging, combining, and operating these elements, which was intended to be claimed, left in any doubt. The patentee, in the specification, declares “that the following is a full, clear, and exact description of the *construction and operation of the same.*” He gives also a clear description of his particular mode of arranging, combining, and operating the movable and the fixed block. And when he arrives at the claim, after saying he

Argument for the plaintiff in error.

claims the movable block, in combination with the fixed block, he adds, "*in the manner herein described and set forth.*" Specifications are entitled to a liberal construction, (*Winans v. Denmead*, 15 Howard, 341, and cases there cited,) though there is no necessity for special liberality here.

Then the blocks E and D, and the described mode of arranging, combining, and operating them, *have peculiar characteristics*. The specification says of block D that it is a "solid block, making a part of the anvil, with its side shaped to the side of the rail, while placed in its natural position." And again, "*close to these (i. e., close to the recesses C C in the 'improved anvil') is cast a raised block D, nearly as high as the rail, and with its farthest edge also shaped to fit the side of the rail*, when it lays across the anvil in its natural position." It thus appears that this block D is a solid projecting part of the "improved anvil;" it is cast with it; as the specification declares, it is "a solid block, making a part of the anvil." Its outer face is shaped to correspond with one side of the rail when laid upon the anvil; and its office is, not merely to resist the pressure exerted on the rail by the movable block, *but to resist the force exerted upon the rail by the hammer in welding, and thus preserve the shape of the rail.* Three characteristics are here set forth, and each is essential to enable the block D to perform its appropriate functions in the combination.

The specification describes block E as a movable press-block, held down to the anvil by dovetail tongues on the anvil, and grooves on the movable press-block. Again, "*Next this (i. e., next the block D) I attach to the face of the anvil*, by dovetail tongues and grooves, or in any other convenient manner, what I call a movable press-block E, with a similar but reverse-shaped edge, lying opposite the other, so as to inclose the rail between the two, as in the jaws of a vice." Here, too, are three characteristics, and each is also essential to enable the block E to enter usefully into the improved combination.

Then as respects the described mode of combining and working the blocks D and E. The specification declares that the block D is cast on and makes part of the anvil; and that the block E is held down to the anvil by dovetailed grooves and tongues. The two blocks are thus kept in certain relations to each other by and through the anvil, which thus forms one of the essential means of combining and operating them. They are connected with the anvil; and through that connection they are enabled to operate in combination, each performing its appropriate function, in harmony with the other, and their combined operation produces the specific

Argument for the plaintiff in error.

desired result of holding and so supporting the rail on the anvil that it can be welded without destroying its peculiar form.

But, first, the block E must be moved on the anvil ; and these means of motion must be such that *the entire face of the block E shall be kept parallel with the entire opposite face of the block D*, so as to exert the same pressure on every part of both faces of the rail ; and, second, the means of movement must be such that when the block E has been advanced to its forward position, so as to grasp the rail and press it against the block D, *the machinery shall hold E rigidly in position*, not allowing it to be forced at all out of its position, otherwise the heavy blows necessary to weld the iron would destroy the shape of the rail. And a third result is to produce the desired backward and forward movements and this rigidity, by simple and sufficient means, readily worked, either by hand or power.

All these necessities are met by means of the tongues and grooves and the two eccentric cams, which cams, by a half revolution of a crank, advance the entire face of the block E parallel to the opposite face of the block D, until the rail is grasped, thus exerting the same pressure on every part of both faces of the rail, holding E rigidly in that position by the strength of the machine, so as perfectly to support every part of the rail against the force of the welding hammer, and by reversing the crank half a revolution, relieving the rail and placing the blocks E and D in position to receive another rail on the anvil.

What is the thing patented? The thing patented is described by *its title* to be "a new and useful improvement in the common anvil or swedge-block, for the purpose of welding up and reforming the ends of railroad rails when they have exfoliated or have become shattered," &c. By the *description* which the patentee declares describes "*his improvement*," it appears to be *an improved anvil*; one of the parts of which is the block D, having the characteristics before described ; another part of which is the block E, having the characteristics before described ; and these two parts are combined and operated in the manner described to produce the effects indicated.

The result of the whole is, that the patentee claims to have taken the common *anvil* or *swedge-block*, and to have *improved* it by his new combination ; and that the combination consists in this, viz : That he has raised on the anvil a block, D, making a part of the anvil, having a face upon it suited to receive the side of the rail, and press equally on it, so as not only to grasp, but support every part of that face of the rail under the blows of the welding hammer ; that he has combined with this projecting block D, which is

Argument for the plaintiff in error.

part of the anvil, another block, E, which is at the same time attached to the anvil and is movable thereon; that this block E is so attached to the anvil *as to be effectually a part of it when the anvil is used as an anvil, to resist the welding blows of the hammer, and to be movable when the objects to be accomplished require it to be moved;* that while this block E is thus an effectual part of the anvil, it is also an effectual and sufficient support of the rail while undergoing the welding blows of the hammer; and in combination with the block D, not only grasps the rail and holds it on the anvil, but supports every part of the two faces of the rail, and keeps them from being forced out of shape by the blows upon the upper surface of the rail in welding its parts.

2. It is obvious that to compare any prior machine with this machine, it is necessary to see if any prior machine was adapted to accomplish the same, or an analogous result, by substantially the same means. Perhaps this is not the strictest possible abstract statement of the true inquiry. This is a patent *for means*, and viewed abstractly, the sole inquiry is, whether the *patented means* are substantially the same as previously existing means. But the application of the patent law rarely admits of such abstraction of means from ends. A new use of an existing machine is not patentable. A modification of an existing machine, whereby it is rendered capable of a new use, is patentable. One of these propositions is just as true as the other. Neither proposition can be safely applied, without careful regard to the facts of the case it is to govern. And, without going upon debatable ground, it is safe to assert, that if there was no prior machine which could accomplish *the same, or an analogous result, by the use of substantially the same means*, the machine is new, under our patent law. The practical results of inventions afford the reasons for the patent laws. They are designed to encourage progress in the useful arts; and therefore to disregard the practical results attained by a patentee would be to lose sight of the final cause of the system. And it is also true, and the more one is conversant with this peculiar subject the more impressed he will be with the truth, that means and ends are inseparably connected, and that it is not one of the cases ordinarily arising under the patent law that *a new and highly useful end has been attained by the application of means already well known and before applied to an analogous end.* It is a possible case; and therefore I stand on this proposition, that *if there was no machine, prior to that of the patentee, which could accomplish the same useful purpose, or one substantially analogous to it, by the use of substantially the same means, then his patent is valid.* Now, in looking at

Argument for the plaintiff in error.

the rulings excepted to, two well-settled rules are to be kept in mind:

I. The question whether any machine, proved, or admitted to have existed before the patentee's invention, was substantially the same as the thing patented, was *a question of fact for the jury*.

II. The patent is *prima facie* valid, and the burden of proof is on the defendant. Consequently the defendant was required by law to satisfy the jury, not only that the machine he relies on did exist before the patentee's invention, but that some one of them could accomplish the same useful purpose, or one substantially analogous to it, by the use of substantially the same elements, combined and arranged in substantially the same manner as he described and claimed in his specification.

As to the admission of the plaintiff. Upon such an admission as was made, the patent cannot be declared void, as a conclusion of law, unless it is a conclusion of law that after movable press-blocks, in combination with faces of various shapes, had been used for various purposes, *there was no field of invention left unoccupied*; or if any such field was left, *that the claim of the patentee is not within that field*.

Now the first of these is manifestly not a conclusion of law. The law cannot determine it to be impossible to make a new combination to produce a new and useful effect because the principal elements have already been combined. A patent for a combination is for an entirety, formed out of the described elements, combined and arranged by the described means and operating in the described manner, to produce the described effect. Though all the elements had previously been combined in *some way*, to produce *some effect*, yet if the patentee modified one or more of the elements, to suit his new design, and combined the elements by different means, and so as to operate in a different way, to produce a new and useful result, it is a new combination, and the subject of a patent.

It is manifestly possible there was a field of invention which could be occupied by a combination of the same elements used here, provided the patentee should modify those elements to adapt them to his new use, and should combine and operate them in a different way, so as to produce a new and useful result; *and it must be a question of fact and not of law whether he has so done*. If he has, he has made a patentable invention; and as a patent has been granted to him, after examination by the proper public officers, it is presumed he has made an invention, until the contrary is shown. Notwithstanding the admission, as there was a

Argument for the plaintiff in error.

field of invention left, he is presumed to have occupied that field, unless upon the fair construction of his claim it appears he has passed out of that field, and included something which, by his admission, appears to be old. But it has already been shown that this claim cannot be so construed.

As to the models introduced by the defendant. Though on several of them movable and fixed blocks were used, we assert that on inspection it is obvious that the forms of those blocks, the manner in which they were combined, and the means by which they were moved and held, were not adapted to the new design of the patentee. But if all this should be denied, still it is a question of fact whether he has done this. How is the court to say, as matter of law, that a machine for holding and supporting rails, under a welding hammer, is substantially the same as a machine for making bayonets, or angle-irons, or anchors? The patent raises a presumption that they are not the same, and without the aid of the jury, how has this presumption been overcome? Yet, upon the introduction of these models, and upon the admission of the plaintiff, as given in the reporter's statement, the court did instruct the jury, as matter of law, that the patent was void. The instruction took the entire case from the jury, and no further instruction could be given to them, except the direction, which was given, that the defendant, as matter of law, was entitled to their verdict.

This instruction excepted to raises the question whether upon the introduction by the defendants of the models mentioned in the bill of exceptions, and the admission therein stated to be made by the plaintiff, it was a conclusion of law that the thing patented was substantially the same as was exhibited in either of the said models, or as was embraced in that admission; or whether there was still matter of fact to be passed on by the jury. If the claim is construed to be for such a press-block as is described, and such a fixed block as is described, combined, and arranged in the manner described, to produce the effect described, no amount of evidence concerning the existence of prior machines could remove from the jury the question whether either of these machines included this thing claimed by the patentee. This is a distinct and substantive question, which could arise only after the prior existence of the other machines had been shown to and passed on by the jury.

Now upon this distinct and substantive question, as there does not appear to have been any evidence of experts, it was for the jury, upon an examination and comparison of the prior machines, to find whether either of them embraced the particular combina-

Argument for the plaintiff in error.

tions described and claimed by the patentee; and upon this question the burden of proof was upon the defendant.

The admission of the plaintiff "that movable press-blocks, in combination with faces of various shapes and used for various purposes, were older than the alleged invention," dispensed, indeed, with the production of evidence of the prior existence of those machines; but the question of fact still remained, *whether either of them included the particular combination described and claimed by the patentee.* It is true that if he had claimed a machine not distinguishable from *any other* having a press-block, in combination with a face of some shape, and used for some purpose, then his admission would have conclusively proved, not only the prior existence of such machines, *but their identity with the thing claimed;* and, therefore, though it is not very clearly expressed in any part of the bill of exceptions, it would seem that the court *did give this broad construction to the claim*—holding it in effect to be a claim of a movable and a fixed block, without regard to any modification made by the patentee of those elements to fit them for his special use, and without regard to the particular manner in which the patentee had combined them so as from the whole to produce a new result, and without regard to the degree of utility of that result. But it has been shown that this is not the true construction.

The rule laid down by the court, that "it was the duty of the patentee to describe clearly what he claims as his invention, so that it might be distinguished *without doubt or difficulty* from everything else," seems hardly consistent with that liberality in the construction of claims, which has been often announced by this court, as due to the nature of the subject, and just to inventors, and which has been so constantly applied by the Circuit Courts in administering the patent laws. *Corning v. Burden*, 15 Howard, 269; *Winans v. Denmead*, 15 Id., 341, and cases there cited. It is a rule which would destroy a very considerable proportion of meritorious patents. But still it might be applied to this specification and leave it valid. For, when it is borne in mind that each of the blocks is carefully described, both in words and by references to the drawings; that the manner of combining and operating them is also carefully and distinctly shown; that the new and useful result is also clearly described, and that the manner in which each part operates in the production of that result is pointed out and exhibited, and that the claim is for "the press-block E, having its edge formed to the side of the rail G, in combination with another block D, with its edge of a similar but reversed form, (the movable blocks to be operated by two cams, or in any other

Argument for the defendant in error.

convenient manner,) for the purpose of pressing between them a T or otherwise shaped rail, thereby greatly facilitating the difficult operation of welding and renewing the ends of such rails, after they have been damaged, *in the manner herein described and set forth;*" it would be doing violence to the clearly-expressed intention of the patentee to hold that he has made a broad claim of press-blocks, and faces however formed, combined in any way, for any use.

Mr. Keller, contra:

1. The construction of the claim given by the court below is the true construction of the patent. The prayer to charge, when taken in connection with the charge, leaves no doubt as to the construction which was given to the claim of the patent by the court below. The court was requested to charge that "the invention patented consisted of the movable press-block, and the block D, in combination with the anvil or swedge-block B, described in said specification." The court refused so to charge, but did charge that the patentee claimed as his invention the combination of the fixed with the movable block or jaw, operated by two cams, or in any other convenient manner. And although the court, in the charge, did say that the specification shows that the stationary block or jaw is to be a part of the anvil or swedge-block, and to be used in that combination, nevertheless it is clear that the court refused to consider the anvil as one of the elements of the combination claimed by the patentee. The court below also clearly excludes, from the invention claimed, the shape and proportions of the jaws, holding that these were merely incidental to the use to which the machine was applied.

Now this construction is the true construction, because:

I. The Patent Act of 1836, § 6, requires the patentee to give not only a full, clear, and exact description of the manner of making, constructing, and using his invention, but that he shall also "particularly specify and point out the part, improvement, or combination which he claims as his invention."

This provision is based on the presumption that in giving a full, clear, and exact description of the manner of making and constructing a machine, the applicant, unavoidably, will be required to describe many things well known in the arts prior to his invention; hence the necessity for the other provision of the same section, which requires that out of all which he has thus described he shall specify and point out the part, improvement, or combination which he claims as *his* invention. In view of this provision the

Argument for the defendant in error.

court could not include in the claim of a combination any element not named in the claim, however clearly such part may be presented in that portion of the specification which describes the manner of making, constructing, and using the machine.

II. The elements, which constitute the combination claimed by the patentee, are not only in terms the movable press-block, with its edge formed to the side of the rail, and the stationary block, with its edge of a similar but reversed form; but the better to exclude all other things from the combination intended to be claimed, the patentee has stated that the things so claimed, in combination are "for the purpose of pressing between them a T or otherwise-shaped rail." And although the machine, as an entirety, is stated to be for the general purpose of welding up and re-forming the ends of railroad rails, such general purpose will not justify the introduction of the anvil as one of the elements in the combination claimed, in the absence of all mention of the anvil in the claim, because the purpose specified in the claim, and the office assigned to the combination claimed, is that of pressing or gripping the rail, and the anvil performs no office—subserves no duty—in pressing the rail, and it is the duty specified in the claim, and not the use for which the entire machine is designed, which is to control in the construction of the claim.

III. That the patentee did not intend to include the anvil as one of the elements of the combination claimed, appears in the fact that, in the descriptive part of the specification, he designates the several parts by letters of reference to the drawings—the anvil by the letter B, the stationary press-block by the letter D, and the movable press-block by the letter E—and that in specifying the combination which he claims as his invention, he designates the parts by the same letters, and the letter B does not appear in the claim.

IV. As the movable and the stationary press-blocks are specified in the claim in terms indicated by letters of reference, and perform the whole duty for which the combination is claimed, and as the anvil is not specified in terms in the claim, nor indicated by letter of reference, and can perform no duty in the purpose for which the combination is claimed, by no rule of construction can the anvil be introduced as one of the elements of the combination claimed.

V. The anvil or swedge-block, described and represented in the patent, could not be claimed in combination with the press-blocks, because it has no mechanical relation to, or dependence upon them. The anvil or swedge-block is indicated in the drawings by the

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letter B. It has recesses or dies formed in its upper face, in shape the reverse of the sides of the rail, so that when a rail is out of shape it can be laid in either of these recesses or dies, and hammered into shape. Now, in the specification, after describing the manner in which the ends of a rail are to be re-formed when gripped between the stationary and the movable press-blocks, the patentee says: "Should any imperfections remain, which is not usual if the first operation is properly gone through with, they" (the imperfections) "can be removed by proper hand swedges, after placing the rail in the recesses C C for that purpose." From this it will be seen that the anvil or swedge-block B, with its recesses C C, has no mechanical combination with, or relation to the press-blocks. It makes no part of an organized mechanism. It is simply a swedge-block or anvil of the usual construction, placed in convenient proximity to the press-blocks, so that if it should become necessary to swedge the side of the rail it can be done conveniently. One might as well say that an improvement on an ordinary vice could be claimed in combination with an ordinary blacksmith's anvil, if used in the same shop and placed at a convenient distance, so that a piece of iron, after being forged, could be conveniently put in the vice to be filed.

2. The court below said rightly that, in the view which it took of the case, "there could be no question of fact for the jury to decide."

No exception was taken to that part of the charge in which the court below stated that "movable press-blocks in such combinations, with faces of various shapes, and used for various purposes, it is clearly proved and frankly admitted, are greatly older than the alleged invention of the patentee."

In view of the ruling of the court on the questions of law, there was but one material question of fact in the case, and that was whether, prior to the alleged invention by the patentee, similar combinations of press-blocks, with faces of the required shapes, were known and used in the United States, or patented or described in any printed publication in this or any foreign country. And that fact having been conceded by the plaintiffs, the case was left to stand alone on questions of law. It was therefore the duty of the court to direct the jury to render a verdict for the defendant. *Parks v. Ross*, 11 Howard, 373; *Morgan v. Seaward*, Webster's Patent Cases, 170.

Mr. Justice CLIFFORD delivered the opinion of the court.

I. Patentee describes his invention as a new and useful improvement in the common anvil or swedge-block, "for the purpose of

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welding up and re-forming the ends of railroad rails when they have exfoliated or become shattered from unequal wear, occasioned by the inequalities of the road. Having made out a *prima facie* case, the plaintiffs rested, and the defendants then introduced certain models of machines, for the purpose of showing that the patentee was not the original and first inventor of his improvement. Models of machines so introduced were the following, to wit : *First*, a model of an angle-iron machine. *Secondly*, a model of an anchor machine. *Thirdly*, a model of a bayonet machine. *Fourthly*, they also introduced a copy of an English patent granted to one Church, with the specifications and drawings annexed ; and the statement in the bill of exceptions, in regard to all those machines, is that they were known prior to the invention of the patentee in this case. Bill of exceptions also states, and it is important to observe the fact, that, in addition thereto, the defendants also adduced evidence to show, and that it was admitted by the plaintiffs, that movable press-blocks, in combination with faces of various shapes and used for various purposes, were older than the alleged invention of patentee. Other evidence, it is stated in the bill of exceptions, was also introduced by the defendants, for the purpose of showing that the patentee was not the original and first inventor of the machine for which he obtained the patent ; but the evidence is not given, and it is not perceived that the statement is of any importance at the present time.

II. Charge of the court is given entire in the record ; but in the view taken of the case, it will only be necessary to refer to so much of it as relates to the construction of the patent and the effect of the admission made by the plaintiffs. Construction of the patent, as given by the court, was that the patentee claimed as his invention the movable press-block, having its edge formed to the side of the rail in combination with the block D, the movable blocks to be operated by two cams, or in any other convenient manner. "Specification shows," said the court, "that the block D is fixed and is a part of the anvil or swedge-block, in combination with which, as well as with the fixed block, the movable block is to be used." Such is the substance of the charge so far as respects the construction of the patent ; but the court added, in the same connection, that "movable press-blocks in such combination, with faces of various shapes and used for various purposes, it is clearly proved and frankly admitted, are greatly older than the alleged invention of the patentee ;" and in support of that proposition of fact, the presiding justice referred to the several models given in evidence by the defendants, and to the description con-

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tained in the English patent, as examples of their use and application. Following those references, and in connection therewith, the court told the jury that "the patentee, therefore, claims that of which he is not the inventor, and this fact is fatal to the patent, and entitles the defendants, as matter of law, to your verdict." Exceptions were seasonably and duly taken to all that portion of the charge of the court. Principal complaint against the charge is that the court decided a question of fact which belonged to the jury, and which should have been submitted to their determination under proper instructions.

III. Whether that complaint is well founded or not depends very much, if not entirely, upon the construction to be given to the patent. Patents for inventions are not to be treated as mere monopolies, and, therefore, odious in the eyes of the law; but they are to receive a liberal construction, and under the fair application of the rule, *ut res magis valeat quam pereat*, are, if practicable, to be so interpreted as to uphold and not to destroy the right of the inventor. *Ryan v. Goodwin*, 3 Sum. C. C. R., 520.

Claim of the patentee in this case is not for the anvil-block nor its recesses, as is expressly stated by him in his specification. On the contrary, what he claims as his invention is the movable press-block, having its edge formed to the rail, in combination with another block, which is described as a fixed block, and whose edge is of a similar but reversed form, for the purpose of pressing between them the railroad rail. Shape of the rail is immaterial, except that the inner face or edge of the respective blocks must be so made and formed as to fit the respective sides of the rail to be repaired. Statement of the claim is, that the movable blocks may be operated by two cams, or in any other convenient manner, and the representation is that the machine will greatly facilitate the operation of welding and renewing the ends of such rails, after they have been damaged in the manner herein described and set forth. Taking the description of the machine as set forth in the specification, it consists of the following elements: *First*, a bed-sill, on which the anvil is placed. *Secondly*, the anvil or swedge-block of cast-iron, usually four or five feet long, and sixteen inches across the face. *Thirdly*, a solid block cast with and making a part of the anvil, nearly as high as the rail when it is laid across the anvil in its usual position. *Fourthly*, a movable press-block, attached to the face of the anvil by dovetailed tongues and grooves, having an inner edge or face shaped to fit the opposite side of the rail so as to inclose the rail between the two, as in the jaws of a vice. Press-block, as before remarked, is worked by two eccentric cams, which

Opinion of the court.

serve to advance the press-block upon its dovetailed tongues and grooves parallel to the opposite face of the fixed block. When the press-block has been thus advanced so far as to bring its face in contact with one side of the rail, the cams and the tongues and grooves hold the press-block in position, and the rail is firmly grasped between the inner faces of the two blocks. Inventor then goes on to describe the mode of using the machine, which he says is extremely simple and effective, and sufficient has already been remarked to show that his representation is correct, without reproducing the description. Immediately following that description is the claim of the patent, as heretofore given, which need not be repeated.

IV. Evidently, the claim must be construed in connection with the explanations contained in the specification, and when viewed in that light, it is quite clear that it should receive a more restricted construction than was given to it in the charge of the court. Special devices are described as combined and arranged in a particular manner, and operate only in a special and peculiar way for a special purpose, and to effect a special result. Obviously, it is not a claim for any kind of movable press-block, combined and operating in any way with any kind of fixed block, to accomplish any purpose or effect any kind of result. Giving that construction to the claim, then indeed it would be true that the plaintiffs, when they admitted that movable press-blocks, in combination with faces of various shapes and used for various purposes, were older than the invention of the patentee, did admit away their whole case, and, if viewed in that light, would be equally true that there was no question of fact to be submitted to the jury. But such is not the true construction of the patent, as is obvious from every one of the explanations of the specification. Invention was of such a movable press-block as is described, having its edge formed to the side of the rail in combination with such other block as is described, with its edge of similar but reversed form arranged as described, and combined and operating in the particular way described, for the special purpose of effecting the described result.

When viewed in that light, it is equally clear that the charge of the court was erroneous, because there was an important question of fact which should have been left to the jury, whether the machines introduced by the defendants or any of them, or any of the prior movable press-blocks, as is shown in the admission, were substantially the same as the machine of the patentee. American authorities, at least, hold that every such question is one for the

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jury, and upon that ground alone we have come to the conclusion that the judgment of this case must be reversed.

Judgment of the Circuit Court is accordingly reversed, with costs, and the cause remanded with direction to issue a

NEW VENIRE.

BURR v. DURYEE.

(1 Wallace, 531.)

1. The practice of surrendering valid patents, and of granting reissues thereon in cases where the original patent was neither inoperative nor invalid, and where the specification was neither defective nor insufficient—the purpose being only to insert in the reissue expanded or equivocal claims—is declared by the court to be a great abuse of the privileges granted by the thirteenth section of the Patent Act of 1836, authorizing a surrender and reissue in certain cases, and is pointedly condemned.
2. As the Patent Act grants a monopoly to any one who may have discovered or invented "any new and useful art, machine, manufacture, or composition of matter," and as a machine is a concrete thing, consisting of parts or of certain devices and combinations of devices, a patent must be granted, in cases where the invention comes within the category of a machine, for it, and not for a "mode of operation," nor for a "principle," nor for an "idea," nor for any abstraction whatsoever: and this rule of law is not affected by the fact that the statute requires the patentee to *explain* "the mode of operation" of his peculiar machine which distinguishes it from all others.
3. The machine patented to Seth Boyden, January 10, 1860, for an improvement in machinery for forming hat-bodies, is no infringement of any of the patents granted to Henry A. Wells for the same thing. The patents to Wells, so far as they related to an improvement in the *process* of making hat-bodies, were void; William Ponsford having invented and patented the thing before him, and Wells having seen Ponsford's invention.

APPEAL from the Circuit Court for the District of New Jersey.

The complainant, Burr, as assignee of a patent granted to Henry A. Wells, for "an improvement in the *machinery* for making hat-bodies, and in the *process* of their manufacture," filed a bill in the court below against Duryee and others for infringement. The patent to Wells was granted originally April 25, 1846. It was surrendered in 1856, and reissued in two separate patents, one for the improved *machine*, the other for the *process*. In the spring of 1860 these patents were extended, and afterwards, December 3, of that year, they were surrendered and reissued with what were alleged to be *amended* specifications; the bill being filed on these reissues of 1860, numbered respectively No. 1086 and No. 1087; the former for process, and the latter for machinery. The court below dismissed the bill, and the case came here by appeal.

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These reissues, with the amended specifications, were conceived by the appellant, Burr, to have been justified in his case by the terms of the Patent Act of 1836, § 13, allowing such reissues in certain cases, and among them the following one, to wit:

“ Whenever any patent shall be inoperative or invalid by reason of a defective or insufficient description or specification.”

The chief questions in this court were in effect—

1. Whether a certain machine, patented to one Seth Boyden, infringed in terms the machine part of the patent originally granted to Wells?

2. If it did not, whether, under the right given by the Patent Act of 1836, § 13, to surrender and have a reissue in certain cases provided for by the act, the owner of the original patent could, by such surrender and reissue of a patent, enlarge its operation in a way which the present complainant sought to do, and which is stated farther on?

3. Whether Wells was the original inventor of the *process* part of his patent?

In their more general aspect, however, the first two questions involved some of the fundamental principles in the law of the issue and reissue of patents; and they were argued elaborately and with great ability on both sides.

The learned Justice GRIER, J., who delivered the opinion in one of the cases here reported, (see *postea*,) refers to the “large museum of exhibits in the shape of machines and models” which had “been presented to the court,” and which, he states, were “absolutely necessary to give the court a *proper* understanding of the merits of the controversy.” Most of them were introduced by the defendant, and they were arranged and explained with admirable clearness by one of his counsel, Mr. George Harding.* Drawings—of which but three can here be given—supply imperfectly originals thus advantageously presented. Without them, however, no idea *at all* can be had of the case; and the reporter trusts that while, from the special difficulty above referred to, of understanding the case perfectly, without an inspection of actual machines, he will be pardoned for a statement of it which may be not intelligible to all; he will, on the other hand, be excused for incumbering a book of law reports with drawings, which, in the eyes of a casual observer, will give to it the aspect of a treatise on physical science, more than the aspect of one on the science of jurisprudence.

*The whole business of making hats, from the disintegrating of the fur to the production of a hat-body, was actually carried on and exhibited in the court-room.

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Any complete understanding of the principles which the case embraces and settles requires some preliminary explanation of the particular art which happened to be the one in which the questions were presented to this court; the art, to wit, of the *hatter*.

EXPLANATION OF THE ART.

Hat bodies are manufactured out of fibres of fur or wool felted together. The fact that when the fibres of wool or fur are moistened and rubbed together they would interweave spontaneously and form the fabric called felt, has been known from a remote antiquity. The process of felting is believed to have been anterior to the art of weaving.

In Asia felted wool was used at a very early day for making tents, cushions, and carpets. It was known to the Greeks as early as the age of Homer, and is mentioned by him, and also by Xenophon and Herodotus. Its use was introduced into Rome from the Greeks, and it is mentioned by Pliny. Felt hat-makers appeared in France, in Nuremberg, and in Bavaria, early in the fourteenth century. It had been conjectured by Monge, a French *savant*, in 1790, that felting was probably due to small scales on the fibres of fur or wool, but, as nothing of the kind was found by the aid of the microscope, the idea was set aside by Dr. Young and other philosophers. Mr. Youatt, an intelligent English naturalist, in 1835, in investigating the subject of felting, carefully re-examined the fibres of wool, and the fur of rabbits and other animals, under a powerful achromatic microscope, and found that each fibre of fur or wool has its surface covered with serrations or saw-like projections, and that all these serrations pointed in a direction from the root towards the point of the hair. The appearance of a short piece of a fibre of wool under the microscope is shown in figure 1, and the wool or fur of the rabbit in figure 2.* The fur of the rabbit does not exceed in diameter the one-thousandth part of an inch; and in an inch of length of each fibre there are found to be 2,880 of these serrations.

In order that the fibres of fur or wool should felt, it is necessary that the relative position which they occupy in nature should be changed, and the direction of the serrations on the fibres shall be reversed to each other, as shown in figure 3, instead of being pointed



Fig. 1.



Fig. 2.

*The great majority of hat-bodies are made of the fur of the Russian hare, the English or the American rabbit, the coney, (a small species of rabbit,) the nutria, and the beaver.

Statement of the case.



Fig. 3.

in the same direction as in nature. The thorough separation of the individual fibres of fur from each other is one of the first essentials in manufacturing fine felted fabrics; not only for the purpose just mentioned, but also to prevent the formation of lumps. The well-known instruments for separating or disintegrating fibrous material are the carding engine, the picker, and the bowstring.

The carding engine is the most complete and generally used instrument for separating all fibrous material, as wool, cotton, fur, and silk. It is shown on the *body* of the instrument, drawn in figure 6, (page 74;) that part of the instrument on the left of the dotted line, and marked F, 2, c, e, b, D, being left off. The carding machine is composed of one central main cylinder, covered with an almost infinite number of fine wire teeth. On the finer qualities of cards there are 79,000 teeth in every square foot of surface. This fine wire-pointed surface turns in contact with a succession of fine wire-teethed surfaces, and between these points the fibrous material is thoroughly disintegrated or scratched apart and separated. When operating on fur a fan (F)—in this plate a rotary fan-wheel—is attached to it, to throw the fur after it has been so separated.

Another mechanism ordinarily used for disintegrating fibrous substances in the arts is the "picker" or "devil," D, which is shown in figure 10, (page 84,) and consists of a series of very short, stiff, metallic teeth or studs, arranged at intervals on the periphery of a cylinder, and which is revolved with great rapidity. It acts by striking or whipping the fibrous material into or against the air with great velocity, and thus scatters it into distinct fibres.



Fig. 4.

The bowstring is a vibrating cord, which also

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acts on the fur in a similar manner to the picker. By being twanged it vibrates, and it whips or strikes the fibres of the fur or wool a sharp and rapid blow against the air. Felt was merely used as the foundation or body for the hat, which body was first stiffened and then shaped into the figure of the ordinary stiff cylindrical hat; and finally, its exterior surface was made to have the appearance of a glossy fur.

A finished hat was formerly made in the following manner: The "body" or foundation was first made of beaver, or rabbit, or coney fur; *first*, by the fibres being deposited in the form of two triangular pieces by means of the hatter's bow, as shown in figure 4, and then felted by rubbing by hand. In forming the body the skill of the workman directed the fur towards the brim or tip, as was required; it being generally necessary to make the *brim* thick. The bodies were then taken to the kettle, or battery, containing boiling water, where, by the workman's repeatedly immersing the body in hot water, and rubbing it on the shelf with his hands for about the space of an hour, the fibers of fur were forced to interlock or felt. The operation is seen in figure 5. Under this process of



Fig. 5.

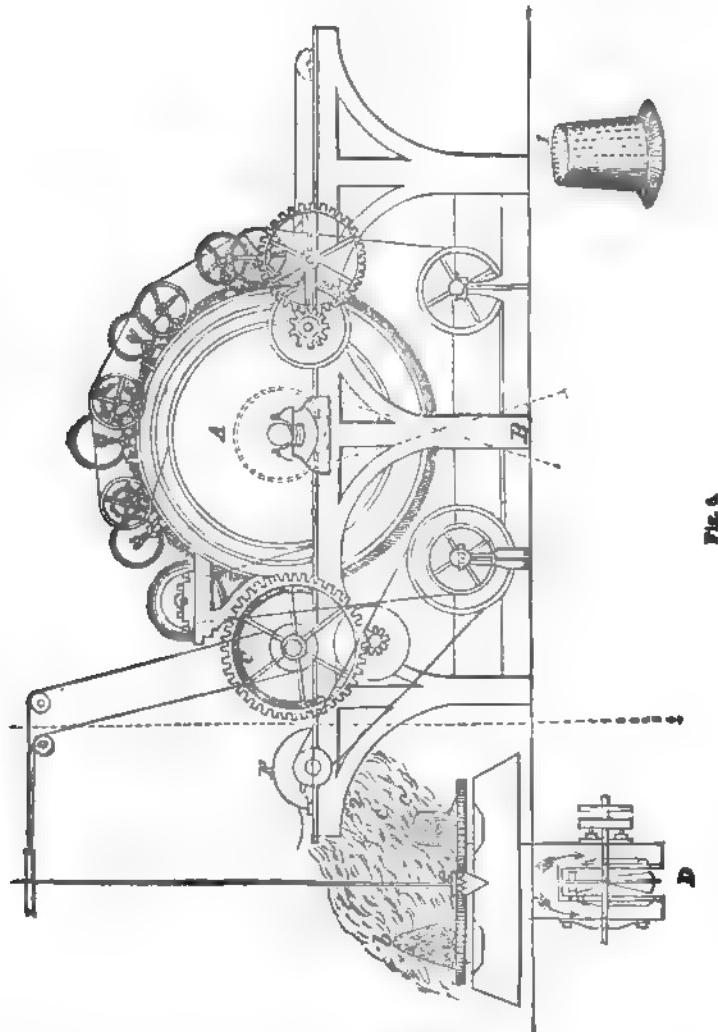
"sizing," as it is called, the body shrinks to nearly one third of its original superficial size, and greatly increases in thickness, compactness, and toughness. The body was then stiffened, either by immersion in a hot solution of glue, or in a solution of gum shellac in alcohol. It was next blocked by being drawn over a cylindrical block and tied at the band, and then felted or stretched so as to make the brim straight. Lastly, the body was dried, and a silk

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plush covering was stuck on the exterior of it by a hot iron, which melted the glue or shellac.*

THE INVENTION IN MACHINERY AND PROCESS OF MAKING HAT-BODIES.

Prior to 1833 no *machine* had been devised for depositing the fur in a proper manner to form hat-bodies; and the process was



*Instead of using silk plush for the exterior covering, the fur-like appearance was originally given to the exterior surface of the body by scalding in, or partially felting the fine fur fibres upon the exterior surface, after the body was stiffened, and before it was blocked, producing a napped surface, and the hat was called a napped hat. At other times the workmen, while engaged in sizing the body, by continually brushing the body with a hand brush, would brush a nap out of its surface. Hats so finished were called brush hats.

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effected solely by the use of a bowstring worked by hand, as shown in figure 4.

In 1833, however, T. R. Williams, an American citizen, of Newport, Rhode Island, while temporarily residing in England, invented, and in the same year patented, a machine for making "hat-bodies," or "foundations," on which hats were to be formed. This machine as a whole is shown in figure 6,* (page 74,) and its object, as patented, was to produce at one operation "hat-bodies," or "foundations," in the state to be at once covered by the silk plush, thereby dispensing with all manual operation but the last.

This machine depended for its action on the principle of distributing the fur fibres in the atmosphere over a perforated hollow cone, (b,) usually made of wire, either of a strictly conical form, (b,) or of the nearer shape of a hat, as seen in the other figure c, of the plate; having an apparatus (D) to exhaust the air, and so to attract the fibres of fur to the cone above. The cones rested and rotated on cog-wheels driven by a shaft and toothed pinion or spur (e.) The cog-wheels were made to rotate in sockets of a cone-box below; itself revolving horizontally on its centre, so as to present each hollow cone in succession to a conduit of fur, which is seen in the plate descending in a shower. Underneath the cone-box was a fan-box, with a socket above for the cone-box to revolve in, and in it a fan with side passages for the entrance of air. The cone-box was connected by a rim with the lower box or conduit leading to this exhaust-box. The fur, as the reader will understand, had been previously disintegrated by the carding machine, and is thrown by a rotating fan (F) in such a way as to be deposited on the cones below. Williams's invention was the first attempt to make use of the principle of atmospheric pressure, or "exhaustion," to cause a deposit of fur or other fibrous material on perforated cones, cone-frames, or "formers," as these contrivances are indiscriminately called. This machine of Williams contained no trunk or conduit inclosed on all sides to carry the fur when disintegrated, and by the character of its aperture to direct it in a particular way towards the cone; it had, however, as the reporter understood it, a sort of "roof" over the disintegrated fur, with open sides; which roof the operator bent more or less, as he considered that the case needed. After sufficient fur had been deposited on the "former," a hollow hinged perforated cover (1) was placed over it, and the two were immersed in a boiling solution of

* This plate is a copy of one annexed to Williams's patent.

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glue and starch, and then the body was removed from between the forms and dried. The immersion of the body, while between the perforated forms, in a solution of glue or starch, as described by Williams, was deemed necessary, in order to cause the fibres to adhere together after the body was removed from the influence of the exhausting apparatus. The fur fibres, by Williams's process, were so glued or stuck together that they could not be felted afterwards.

In 1839—this date must be observed—a certain *William Ponsford* discovered, that when a mass of fur or fibrous material capable of felting is disintegrated, and deposited in a condition proper for felting, and is immersed for an instant in very hot water, that the hot water will, of itself, cause an incipient felting of the fibres, so that a continuous fabric of fur of the shape of the "former" can be then removed from the "former" and finished by the hand of the workman; and he further discovered, that if the bat* be surrounded carefully with a soft cloth, its texture will not be disturbed during the operation of immersion, by reason of the water percolating or passing through it. The mode of applying this discovery was described in the English patent of Ponsford in 1839 as follows:

"The hair as it passes from the blowing machine is to be tossed or thrown into the air, from which it is to be sucked or drawn down upon hollow perforated cones or moulds of metal or wood, with an exhausting cylinder beneath. When the hair has been received on one of those perforated cones or moulds to a sufficient thickness, a cowl of linen or flannel is to be drawn gently over it, and then a hollow perforated cover, of copper or any other suitable metal, is to be dropped over the cowl: the cone or mould is then to be immersed in a vat or tub of boiling hot water, and there allowed to remain for about a minute, after which it is to be taken out, and the metal cover and flannel or linen cowl removed, when the bat or layer of hair will be found felted to a degree that it may be readily finished off by the workman in the usual manner at the oven."

As illustrating the history of the art, and fixing the true relations to it of subsequent discoveries, rather than as directly bearing on the case in issue, it may be mentioned that in 1842 a certain Fosket began experiments in this same branch of business,

*A "bat" is a hat-body in the process of formation.

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and obtained a patent January 23, 1846, three months before Wells obtained his original patent.* Fosket's machine consisted of a combination of a vibrating bowstring disintegrating apparatus, worked by a wheel, as in figure 7; a hollow perforated revolving vacuum cone and a trunk or conductor, partially surrounding the disintegrator at one end, and extending to the cone, for the purpose of guiding and directing the fur between the disintegrating mechanism and the cone. The patent of Fosket was reissued March 23, 1858, two years anterior to the Wells reissues of 1860. A person named Robertson, and Hezekiah Miller, a Philadelphian, had previously made certain improvements, not necessary to be specially presented; the former in 1838, the latter in 1839.

The present controversy related to the formation of the "hat-body," or foundation of the hat on the perforated cone, and the removal of it when formed from the cone without injury to the texture; the former matter being the principal question.

A fur hat-body is required to be made of uniform thickness in the direction of its circumference, and of varying thickness from brim to tip, thin at the tip and along the crown, and thick at the band and brim; but thickest at the junction of the brim with the crown, termed the band. To secure lightness with the requisite strength calls for such a distribution of the material as will concentrate most of it where strength is most required.

Wells, from whom, as already mentioned, the complainant derived title, obtained a patent April 25, 1846, for a machine for forming, on hollow perforated cones, fur hat-bodies, and for a process of removing the body from the cone after it had been so formed, in such a condition as to its texture that its fibres could be subsequently felted together to a proper degree by hand. His machine (figure 8, page 79,) consisted of a revolving brush (F) to separate and throw the fibres of fur, a perforated vacuum cone (o) to receive the fur, and an intermediate trunk (M) to convey the fur to the cone. The aperture of this trunk nearest to the cone had a hinged hood or deflector (s) at its upper extremity, which vibrated

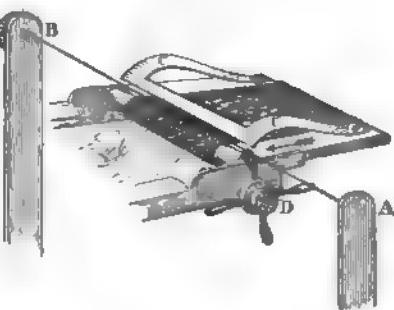


Fig. 7.

* Wells's reissue, No. 1087, referred in its preamble to this patent of Fosket, reciting it as a prior patent.

Statement of the case.

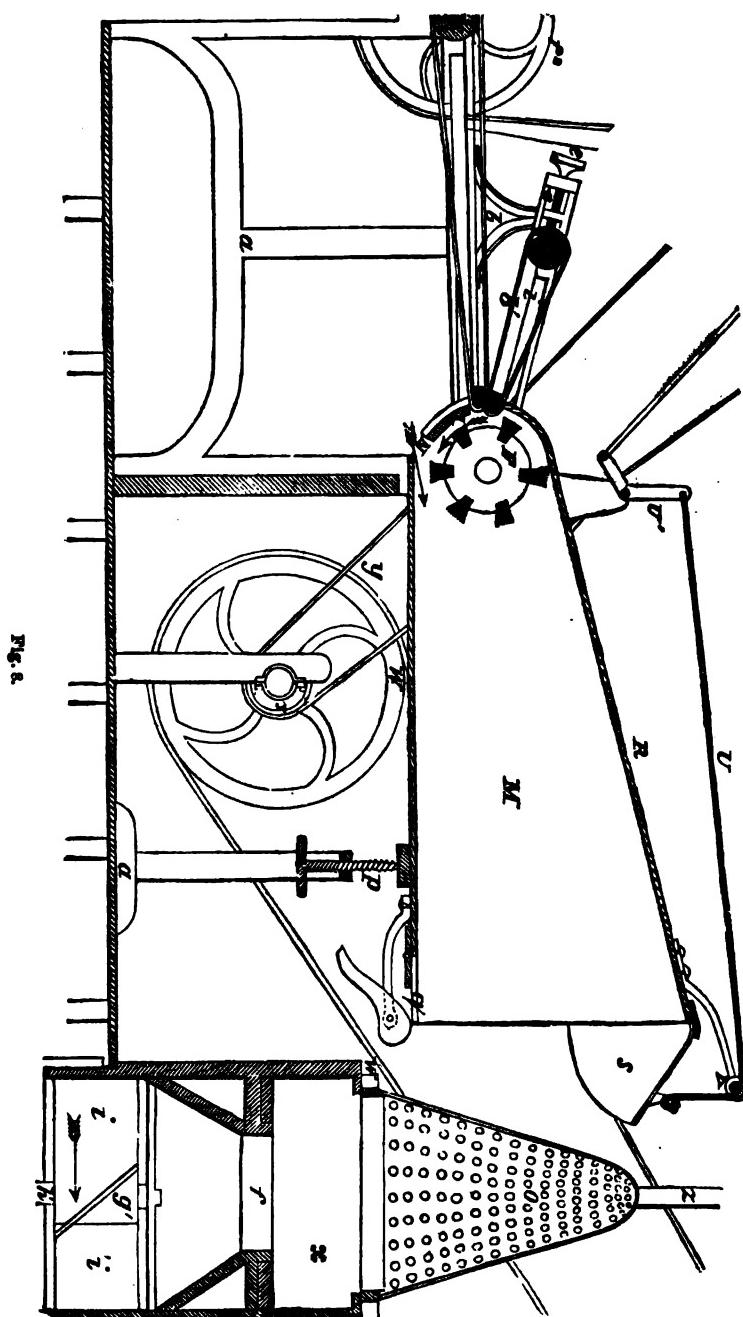
up and down and regulated the deposit of fibres on the cone, so as to make the brim of the hat-body thicker than the tip.

Wells's specification, in its important parts, was as follows; and it is important for the reader to observe not only what is described, but how far in the description Wells describes an improvement on a *machine*; in other words, a *machine* itself, or part of one; and how far something less concrete, as a *mode of operation*; the allegation of the defendants having been, that in *this* specification—the specification, to wit, of the original patent—nothing but a *machine* was described.

"It has long been essayed to make hat-bodies by throwing the fibres of fur, wool, &c., by a brush or picker cylinder, into a perforated cone, exhausted by a fan below to carry and hold the fibres thereon by the currents of air that rush from all directions towards and through the apertures of the cone, and thus form a bat of fibres ready for hardening and felting, but from various causes all these attempts have failed. I have, however, so improved this machine in various important particulars as to remove all the objections, as proved by the test of experiment.

"My improvements consist in feeding the fur, *after it has been picked*, to a rotating *brush*, between two endless belts of cloth, one above the other (*b b'*); the lower one horizontal, and the upper inclined, to gradually compress the fur, and gripe it more effectually where it is presented to the action of the rotating brush, which, moving at a great velocity, throws it in a chamber or tunnel (*M.*) which is gradually changed in form towards the outlet, where it assumes a shape nearly corresponding to a vertical section passing through the axis of the cone, but narrower, for the purpose of *concentrating* and *directing* the fur thrown by the brush into the cone (*o;*) this casing being provided with an aperture (*N*) immediately under the brush (*F.*) through which a current of air enters, in consequence of the rotation of the brush and the exhaustion of the cone, for the purpose of more effectually directing the fibres towards the cone, which is placed just in *front of the delivery aperture of the chamber, or tunnel, which aperture is provided at top with a bonnet or hood, hinged thereto, and at the bottom with a hinged flap, to regulate the deposits of the fibres on the cone or other 'former,' with the view to distribute the thickness of the bat wherever more is required to give additional strength. . . . Its top is gradually elevated and sides contracted so as to make the delivery aperture nearly of the form of the cone, but narrower and higher.*"

Statement of the case.



The Wells disintegrating arrangement is shown in figure 9, and its operation was that of *brushing* the fur while held between the

Statement of the case.

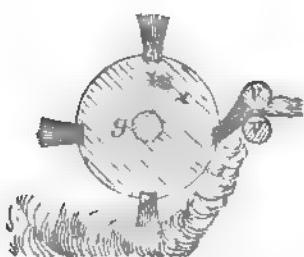


Fig. 2.

feed-rollers (*d d'*). Wells's language was—

"As the fibres are first presented they are *brushed* and 'properly laid by the downward action of the brush,' and when 'liberated' are carried down the curved surface of a chamber, &c., or tunnel."

Wells next described the mode of operation, and afterwards made his claim thus: the same observation applying here, as above, as to the importance of the reader's noting not only the thing described, but also whether this thing was a machine—in the concrete—or something of a more abstract kind.

"What I claim, &c., is the arrangement of the two feeding-belts (*b b'*) with their planes inclined to each other, and passing around the lips (*d d'*) formed substantially as described, the better to present the fibres to the action of the rotating brush (*F.*) as described in combination with the rotating brush and tunnel or chamber (*M.*) which conducts the fibres to the perforated cone or other former placed in front of the aperture or mouth thereof, substantially as herein described. I claim the chamber (*M.*) into which the fibres are thrown by the brush, in combination with the perforated cone or other 'former' (*o*) placed in front of the delivery aperture thereof, for the purpose and in the manner substantially as herein described, the said chamber being provided with an aperture (*N.*) below and back of the brush, for the admission of a current of air to aid in throwing and directing the fibres on to the cone or other former, as described. I also claim the employment of the hinged hood (*s*) to regulate the distribution of the fibres on the perforated cone or other former, as described. And I also claim providing the lower part or delivery aperture of the tunnel or chamber with a hinged flap (*q.*) for the purpose of regulating the delivery of the fibres to increase the thickness of the bat where more strength is required, as herein described, in combination with the hood, as herein described."

In the original machine of Wells, the movable hood, it seemed, did not distribute the fur on the cones perfectly, and it was subsequently improved by Burr & Taylor, who made the trunk of copper or other flexible metal, regulated by a movable top.

Wells also described and claimed in his original patent a process of removing the body after it was formed, which consisted in sur-

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rounding the body, while yet on the cone upon which it had been formed, with cloths, and then placing over it another perforated cover, and immersing the whole together, in hot water, so as to partially unite the fibres of fur into a loose texture—a part of the patent not important here to be dwelt upon. This original patent, as stated in the beginning of the case, was surrendered, for an alleged defective specification, and two reissued patents were granted; one being for *the machine*, and the other for the *process* of removing the body from the cone by immersion in hot water.

On the 10th of January, 1860, Seth Boyden—the person mentioned in the beginning of the case as the person whose patent came into competition with the *machine* reissues (No. 1087) of Wells—obtained letters for a machine for forming hat-bodies, and the defendants used several machines under this Boyden patent. On the 3d of December, 1860, after the Boyden machine had been put in operation at the defendant's factory, where the complainant was invited to inspect, and saw it, the complainant, who now owned the reissues of 1856 of the original Wells patent, again surrendered them for a defective specification, and obtained two new reissues, to wit, the issues No. 1086 and 1087—the former for the *process*; the latter, on which, as already said, the principal question in the present suit turned, for the *machine*. The reissues for both were obtained under the thirteenth section of the Patent Act of 1836, which permits a patentee to surrender a defective patent, and to have it renewed in proper form “whenever it shall be inoperative or invalid by reason of a *defective* or *insufficient* description or specification, or by reason of the patentee claiming in his specification as his own invention *more than he had a right to claim as new*, if the error has arisen by inadvertency, accident, or mistake,” &c. The complainant, in his application for these reissues, stating that he was the assignee of Wells, set forth, as the ground for the application, “that the aforesaid patent is *not fully available to him as assignee*; that said error has arisen from inadvertence, accident, or mistake.”

In the latter of the two reissues of 1860—that is to say, in No. 1087, the *machine* patent, and the patent on which the chief questions in this suit arose—the invention of Wells is thus described; and as the reader's attention was directed, (*ante*, p. 78,) in reading the specification and claim in the *original* patent, to observe how far they described or claimed *machines* in a concrete form, and how far *modes of operation* abstractly, so it must be directed to the same point in reading the description and claim in the reissue; for

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it was upon the different character of the claim in the two that the case largely rested.

"The mode of operation of the said invention of the said Henry A. Wells is such that the fur fibres are directed and controlled so as to travel from the picking and disintegrating brush (F) towards the surface of the pervious cone or other 'former,' (o,) that they may be deposited thereon to the thickness required to make a bat of uniform thickness all around, and of the required varying thickness from brim to tip; and this mode of operation results from combining with a rotary picking and disintegrating brush, and a pervious cone or equivalent former, connected with an exhausting apparatus, suitable means for directing and controlling the fur-bearing currents."

"The said mode of operation, invented by the said Henry A. Wells, is embodied in the following description of the mode of application, reference being had to the accompanying drawings, in which a is a frame properly adapted to the operative parts of the machine, and b the lower feed-apron, on which the stock or fur is spread by the attendant, in separate parcels, each sufficient for the formation of a hat, according to its intended weight."

Then followed a description of the machine, as in the original patent, with these exceptions: 1. The word "hood" which occurred in the original patent is omitted, and the word "upper deflector" substituted for it. 2. The word "hinged flap" is omitted, and "lower deflector" substituted throughout. 3. A clause near the end of the original patent of 1846 is altered by leaving off the part in italics:

Passage in Original Patent of 1846.

It will be obvious, from the foregoing, that the hood may be operated by hand instead of machinery, thus substituting the attention, skill, and cost of an operative for the positive regularity and cheapness of mechanical movements, &c.; but such a change, whilst it gives less perfect and advantageous results, still involves one of the essential parts of my invention.

Corresponding Passage in Reissue of 1860.

It will be obvious, from the foregoing, that the hood may be operated by hand instead of machinery, thus substituting the attention, skill, and cost of an operative for the positive regularity and cheapness of mechanical movements.

After describing the machine as shown in the drawing, and described in the original patent, the specification resumes thus:

"Having thus described the mode of application of the said invention of the said Henry A. Wells, as the same was successfully reduced to practice by him, I do not wish to be understood as limiting the claim of my invention to such mode of application, as

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other modes may be devised, having the same *mode of operation*, or *principle*, and only differing from it in form, or in the substitution of *equivalent* means.

"Nor do I wish to be understood as making claim therein to the combined process of forming and hardening hat-bodies on pervious cones or other analogous 'formers,' preparatory to taking them off in a suitable condition for the after-process of sizing by felting, as this is the subject of another patent.

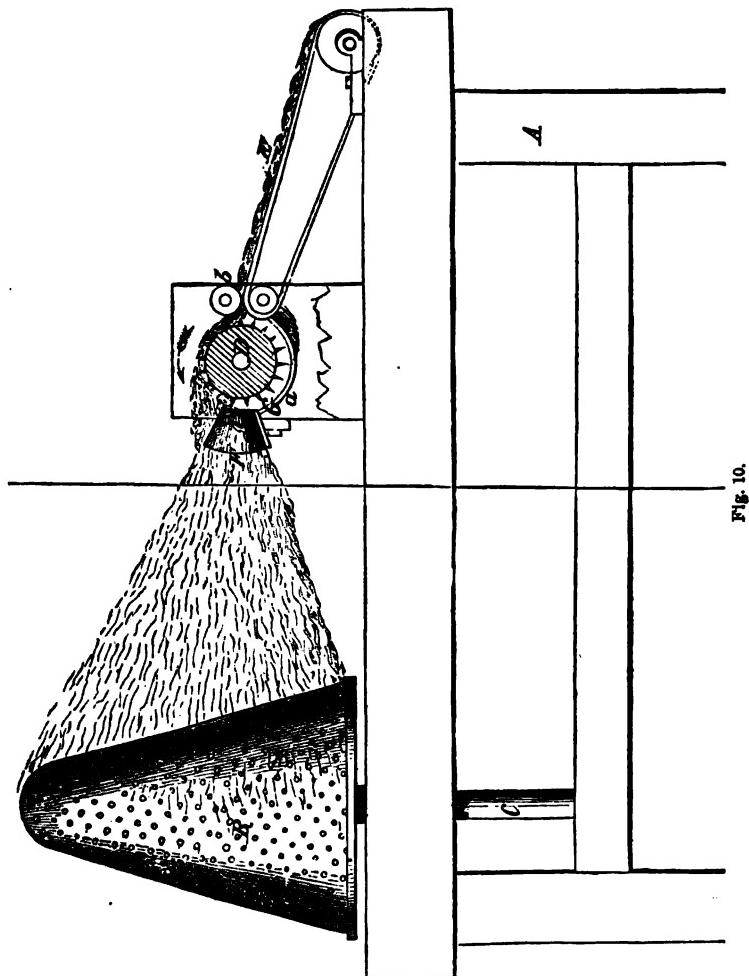
"What I claim as the invention of the said Henry A. Wells, in machinery for forming bats of fur fibres, in the manufacture of fur hat-bodies, is the mode of operation, substantially as herein described, of forming bats of fur fibres of the required varying thickness, from brim to tip, which mode of operation results from the combination of the rotating picking mechanism, or the equivalent thereof, the pervious 'former' and its exhausting mechanism, or the equivalent thereof, and the means for directing the fur-bearing current, or the equivalent thereof, as set forth."

The Boyden machine—or rather the important and peculiar part of it—as used by the defendants, is shown in figure 10, (page 84.) It consisted of a revolving picker, or devil, (the instrument described, *ante*, p. 72,) to separate the fibres, a perforated vacuum cone to receive the fur, and *an intermediate plate to so guide the fur as to cause more to be deposited on the base than the top of the cone*. Boyden thus described his invention; this being the invention which it was alleged by the complainant infringed the right granted by the machine patent, or reissue No. 1087, of Wells, whose specification and claims have just been set forth, (*ante*, pp. 82, 83.)

"This invention relates to an improved mode of directing or guiding the fur to the cone, as hereinafter fully shown and described, whereby trunks and all other comparatively complicated appliances hitherto used for the purpose are dispensed with, and an exceedingly simple and efficient device substituted therefor. The invention consists in placing directly in front of the picker D a plate (F), so bent or curved that its surface will have a certain relative position with the axis of the picker and the surface of the cone (B), and give such a direction to the fur, as the latter is thrown on it by the rapid motion of the picker, that the fur will be drawn properly on the cone by the exhaust or suction within it. The plate F is parallel with and directly back of the picker D, and in close proximity to it, and said plate is curved so as to have its highest point at the centre, as shown clearly in the figure. This

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peculiar curvature of the plate F not only gives the proper direction to the fur, so that the latter may properly cover the cone, but it also *directs* the fur to the cone in *proper quantity*; for instance, the central and highest part of the plate F is comparatively a



short curve, and directs a small quantity of fur to the upper part of the cone, where but a small portion is required; but it will be seen that the lower part of the plate has a double curved surface to supply the cone, one at each side of its centre, so that the cone will be properly fed or supplied, the supply gradually increasing from the top to the bottom of the cone.

"I do not claim the cone, nor the picker, neither do I claim the feed-apron, but I do claim as new the fur-director or plate F,

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curved or bent substantially as shown, and arranged in relation with the cone B and picker D, to operate substantially as and for the purpose set forth."

The court below, remarking that the law relating to patents would be obscured in a "bank of fog" by the subtle ingenuity with which its principles were sometimes presented, held in effect:

1. That the original patent to Wells was to be so construed as to limit the claim to the combination of the revolving fur-throwing mechanism, the trunk, or peculiar guide of Wells, and the perforated vacuum cone; that the *machine* reissue of 1860, (No. 1087,) could give no larger effect, except on an *assumption* that it protected, not a combination of devices to effect a particular purpose, but an abstraction or generalization broad enough to include all combinations whatsoever of devices to produce the same effect; "a transcendental abstraction magnified into a monopoly, not of a machine, (which is a concrete thing,) but of a principle, effect, or result." And that if this was assumed, an assumption was made that the patent protected that which it is no purpose of a patent to protect, and that which made it void.

2. That Boyden's machine was no infringement of the *reissued* patent of Wells; and, if it was such infringement, the *reissue* itself would be void as claiming more than the original did.

3. That as to the patent for process, (reissue No. 1086,) the claim wanted originality; Ponsford's patent having been prior to it.

From the consequent dismissal of the bill the appeal came; the correctness of these views on the case as stated being the principal questions here.

Messrs. Sloughton, Gifford, and Keller, for the complainant:

I. Wells was the first who introduced *any guiding and directing mechanism*, and his introduction of that between the rotating picker and "former" produced a *new machine*, viz, the first machine which could successfully make hat-bodies from the flying fur, by guiding and directing the fur from the picker to the "former." He may therefore treat as infringers all who use the machine with only a *substitute* for one of the parts of the combination, performing the office of the part for which it was substituted.

II. The machine reissue (No. 1087) should not be so construed as to be limited to the particular form of mechanism interposed between the picker and former to guide and direct the fur, but it ought to cover *any device* placed between the picker and the cone, performing the office of the Wells mechanism in guiding and di-

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recting the fur. It is not important what the particular shape or construction of the part between the picker and cone is, so long as such part *performs the office and does the work* which Wells conceived the importance of having there done, and which he there did, and which characterize the operation of his machine.

In *Winans v. Denmead*, 15 Howard, 341, the majority of this court, including three of its present justices, recognized and applied the following principles:

1. That the *mode of operation* constitutes the *essence* of a machine.
2. That the "mode of operation is, in view of the patent law, the *thing* entitled to protection."
3. That a description by the patentee of *one structure or device*, embodying his new mode of operation, is sufficient to entitle him to be protected against the use of *other structures or devices*, to carry on substantially the same mode of operation.
4. That copying the *mode of operation* described is an infringement.
5. That a patentee *may* and *should* so form his specification and claim as to cover his *new mode of operation*.
6. That where the patentee has described his invention and shown its principle, and claimed it in that form which most perfectly embodies it, he is deemed to cover by his claim *every form* embodying *his mode of operation*.
7. That to form an infringement, the defendants need not have produced the same degree of result as the patentee, but that it is sufficient to constitute infringement if the result "be the *same in kind*, and effected by the employment of his *mode of operation* in substance."

To apply this doctrine to the Wells patent, let us ask:

What is the structure or device described in the Wells patent as embodying his inventions? It consists, essentially, of a rotating picker, a previous, exhausted, conical "former," a device intermediate to the picker and former, to guide and shape the current of fur, to present a section of it to the cone nearly in the form of a vertical section of the cone.

What mode of operation is introduced and employed by this structure or device, that is, by the Wells machines?

The answer is, that operation is upon the fur; that its peculiar treatment of the fur identifies its mode of operation; that its mode of operation must be found in the relation between it and the thing acted upon, to wit, the fur; and that the adaptation and capacity of the machine to produce and sustain that relation constitutes its principle; that is, its *mode of operation*. Its treatment of the fur

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is to *disintegrate* it, *throw* it into a current of air which it produces, forming a mixed current of fur and air, and thus suspend it, propelling it toward the cone, and while on its way guiding and directing it, so that when it reaches the cone a section of the current will nearly correspond with a vertical section of the cone, and *depositing* it thence upon the cone in proper thickness for a hat-body.

"*What result* is obtained by means of this mode of operation;" that is, by means of the operation of the Wells machine upon fur?

The result, which is matter of common knowledge and is proved, is, that bodies are formed with such rapidity, and of such quality, and out of such variety of stock, that the manufacture of hats has been revolutionized; that fur is now used for hats which could not before be used; that one machine forms from three hundred and fifty to four hundred hat-bodies per day, while twenty was a large day's work for a good workman by the old process of hand-bowing; that fur hats are made better and out of less material by the operation of a machine than they were by hand-bowing; that hats are greatly cheapened to the consumer by the operation of this machine; and that hand-bowing, once the most difficult part of the hatter's trade, has now ceased to be any part of it.

"*Does the specification of claim cover the described mode of operation by which the result is attained?*"

The Wells specification does directly and expressly cover the mode of operation. In *Winans v. Denmead* there was some doubt as to whether or not the claim was sufficient to cover the invention; that is, the mode of operation; but in this case there can be no uncertainty. In view of the opinion of the court in that and other cases holding the same doctrine, the claim of the reissued patent was made so as to expressly cover the mode of operation of the Wells machine. This claim is for "the mode of operation" resulting from the "combination" of the mechanism.

It is obvious that, where the invention is in machinery, the *mode of operation* embodied in such machinery must constitute the essence of the *means* of producing the result. If any one think otherwise, let him test it by supposing the mode of operation to be taken away from the machine, and see what will remain. To enforce this truth, imagine, if possible, a machine without any mode of operation, and what is it? Clearly nothing but the wood and metal composing it. This shows that the mode of operation is the characterizing feature. *McCormick v. Seymour*, 2 Blatchford, 246; *Tatham et al. v. LeRoy*, 1 Id., 485; *O'Reilly v. Morse*, 15 Howard, 62; *McClurg v. Kingsland*, 1 Id., 202; *Curtis on Pat-*

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ents, sec. 223; *Morgan v. Seward*, Webster's Patent Cases, 170; *Hayworth v. Hardcastle*, Id., 484; *Nelson v. Harford*, Id., 295; *Walton v. Potter*, Id., 587; *Huddart v. Grimshaw*, Id., 95; *Russell v. Conley*, Id., 463.

III. The claim of the reissued machine patent (No. 1087) is not void as being for an unpatentable subject-matter. It will be insisted on the part of the appellees that because the claim *expressly* covers the "mode of operation" of the combination, it covers an abstraction or a result; and that such a result as is not patentable. To this two answers may suffice:

1. That the "mode of operation" of a combination in machinery is neither an abstraction nor an unpatentable result.

2. The phraseology having been recommended by this court, and adopted by the owners of the patent pursuant to such recommendation, the court will sustain it.

It will be further insisted on the part of the appellees, that because the claim specifies that the "mode of operation" claimed *results* from the combination of mechanism, therefore, the claim must cover an unpatentable result.

It is submitted that neither such reasoning nor such conclusion is sound:

1. There cannot be a mode of operation of a combination without the existence of the combination.

2. Creating or bringing into existence the combination, of course, produces the mode of operation.

3. It follows, therefore, that the mode of operation of a combination of parts in machinery *does result* from that combination.

The mode of operation is a property of the combination and cannot exist without it. The phrase, "the mode of operation of a combination," has the same meaning as the phrase, the mode of operation resulting from the combination.

As to infringement: The defendants infringe by using the combination patented, varied only by the substitution of a mechanical equivalent for one of the elements of the combination. The question respecting infringement is not whether the defendant's machine is like the patentee's or is different from the patentee's, because it may be greatly different, and the differences may also be patentable and patented; but the question is, whether or not the defendant's machine contains the invention of the patentee. *Curtis on Patents*, 2 ed., § 224. The fact that an alteration in a machine is patentable, and patented as an improvement, does not prevent its being a mechanical equivalent, and the use of the machine an infringement. *McCormick v. Talcott*, 20 Howard, 405; *Crehore &*

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Brooks v. Norton, Coram Nelson, J., Southern District of New York, A. D. 1853.

As to the reissued patent: The original patent of Wells sets forth the invention which is claimed in the machine reissue, (No. 1087,) and justifies and sustains that reissue.

The specification of that original patent consists of five divisions:

1. A statement of what was needed.
2. A statement that he (Wells) had succeeded in accomplishing what others had tried in vain to do.
3. A general statement of the means by which he had succeeded.
4. A description of such means and its mode of operation ; and,
5. A specification of items claimed.

Both a machine for forming the bats, (or fabric of the body,) and the process of removing them from the "former," are described in this original specification. The machine consists of three classes of mechanism. One to receive, disintegrate, and throw the fur ; another to act upon, guide, and direct the fur ; and the other to receive and hold the fur. A *trunk* was the means which he adopted to put in operation that idea ; and it is acknowledged that that was the best form of means which has yet ever been known for such purpose. In his original specification he says, that this trunk "is gradually changed in form toward the outlet, where it assumes a shape nearly corresponding to a vertical section passing through the axis of the cone, but narrower." After giving this direction, he states the object, and says it is "for the purpose of concentrating and directing the fur. Again, in this specification, he says, in describing the trunk : "Its top is gradually elevated, and sides contracted, to make the delivery aperture nearly of the form of a cone, but narrower and higher."

By this original patent three things are claimed in combination, irrespective of other parts :

1. The trunk or chamber.
2. The perforated cone or "former."
3. The picker or brush.

This shows that he regarded this combination of leading and essential parts as constituting the *substance* and *essence* of his invention of the machinery ; and it is submitted that *any* reissue from this patent covering the *mode of operation* of *this* combination is sustained by the original, and is good and valid against the use of *any equivalent* of any of these three parts.

A combination of the *trunk*, "former," and *picker* being claimed in the original patent of Wells, irrespective of other parts, was, perhaps, sufficient to cover the "mode of operation" of that com-

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bination, and the use of any "equivalents" for either of those parts. But after the direction given by this court in *Winans v. Denmead*, it became not only prudent and proper for the owners of the patent, but their duty, to have it so reissued as to expressly cover the mode of operation of the combination. It was pursuant to the directions of this court in the case just named that the reissued machine patent was obtained.

A patent may be valid, and may have been so held to be by a court, without being broad enough to cover the whole invention. In such cases the act of Congress tenders the patentee relief by reissuing to make his claim broader. *Batten v. Taggart*, 17 Howard, 83. It is no objection to a patent that it has been more than once reissued. *O'Reilly v. Morse*, 15 Howard, 112. If the last reissued patent claimed under be adapted to the invention made by the patentee, and described in his original patent, it is valid as a reissue, and it is immaterial how many prior reissues there may have been, or what may have been the proceedings or mistakes in applications for or in the granting of such prior reissues. *Good-year v. Day*, 2 Wallace, Jr., 283; *Woodworth v. Stone*, 3 Story, 749, 753; *Allen v. Blunt*, 3 Id., 742, 743; *Carver v. Braintree Manufacturing Company*, 2 Id., 432, 438.

The action of the Commissioner of Patents, in accepting a surrender of a patent and granting a reissue, is conclusive that the prerequisites to the surrender did exist, unless fraud be shown. *Stimson v. The Westchester Railroad Company*, 4 Howard, 380, 404; *Same v. The Philadelphia and Trenton Railroad Company*, 14 Peters, 448.

4. As to the reissued patent No. 1086—the process patent. Ponsford's patent, it is true, did exhibit a process of removing the body from the cone on which it had been formed, similar to the process of Wells. But the invention was defective in not presenting or forming the body prior to its removal. It was, therefore, an incomplete invention and substantially different.

Messrs. George Harding and Courtland Parker, for defendants:

As to the originality of Wells's machine patent.

In view of the prior inventions of Williams, the extent of Wells's invention in the machine patent (No. 1087) may be thus analyzed:

I. In the machine patent, Wells substituted as a disintegrating agent for the carding machine, shown in figure 6, page 74, the revolving brush, shown in figure 9, page 80.

II. Wells adopted from Williams's machine the following:

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1. The hollow perforated removable formers, as shown in figures 11 and 12, resting on horizontal wheels:



Fig. 11.



Fig. 12.

2. Two revolving perforated removable wheels, having rims projecting below to turn on, and secure the joint, and cogs on their circumference to be driven by; as shown in figure 13.



Fig. 13.



Fig. 14.

3. A central pinion, or an upright shaft, for driving these wheels. (See figure 14.)



Fig. 15.

4. A cone-box capable of revolving, connected by a rim with a lower box or conduit leading to the exhaust-box, (as shown in figure 15,) having two sockets above for the cone-wheels.

5. A conduit from the cone-box to the fan-box, with a socket above for the cone-box to revolve in, as in figure 16.

6. A fan-box and fan with side passages for entrance of air, as in figure 17.



Fig. 16.

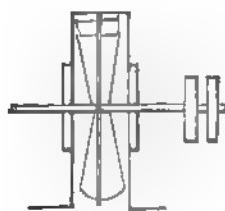


Fig. 17.

7. The use of a hollow perforated cover, to place over the fur while on the former, after the material had been deposited, to

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retain it in position when removed from the exhaust, and while subsequently treated.

III. Wells devised and introduced between his peculiar disintegrating apparatus or brush and the vacuum cone apparatus of Williams, the peculiar conduit, or trunk, or tunnel, as it is called, with its hood and its flap, shown in figure 20, page 93, and thus produced the complete machine shown in figure 8, (*ante*, p. 79.)

As to the originality of the process patent of Wells.

In view of the prior inventions of Williams and of Ponsford, the Wells invention, in the process patent of Wells, (reissue No. 1086,) may be thus analyzed:

Wells describes the covering of the body after it is formed on the cone:

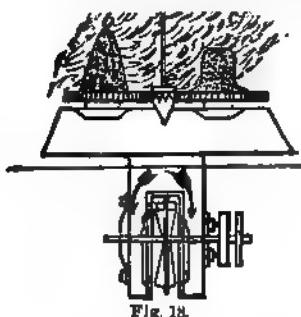
First, with a cloth, which was the invention of Ponsford.

Second, with a perforated metallic conical case, which was the invention of Ponsford and Williams.

Third, the immersion of the whole in a vessel of boiling-hot water, which was the invention of Ponsford.

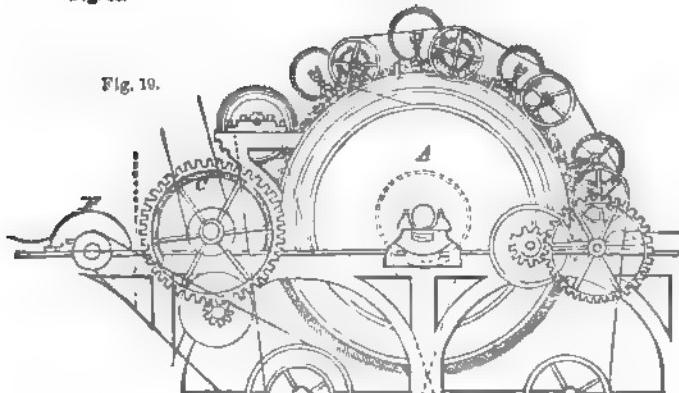
It is, therefore, only necessary to say, that in view of Ponsford's English patent, Wells's reissue, No. 1086, claiming exactly the same invention, should be declared to be void.

As to Boyden's machine: Williams, Wells, and Boyden all used



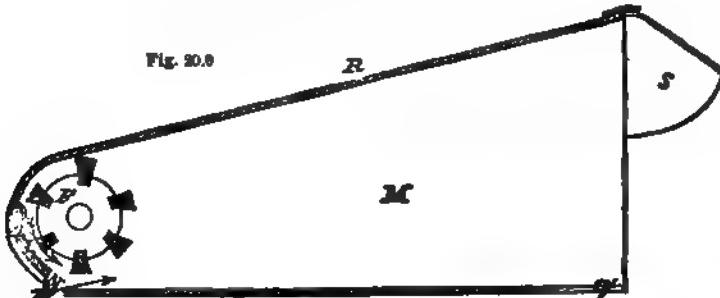
the Williams' vacuum cone apparatus, see fig. 18. Williams having employed a carding machine and fan, F, as shown in fig. 19, to disintegrate and throw the fur on to the cone; Wells, on the one hand, substituted therefor a revolving brush, F, inclosed in a tunnel or trunk, M, with a vibrating hood or cap, s, as shown in figure 20. Boyden, on the other hand,

Fig. 19.



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substituted for Williams' carding machine and fan an open picker,



D, with a curved guide plate, F, in front of it, as shown in figure 21.

As to the infringement of the machine patent:

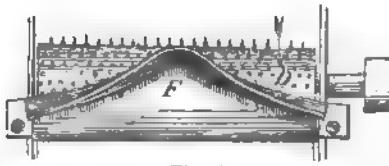


Fig. 21.

The defendants do not infringe this patent upon any construction of its claims which would not require the patent to be declared void. In view of the new state of the art, as shown by Williams's patent and that of Fosket, Wells invented nothing but the peculiar device called a "trunk," with two appendages, to wit, a "hood" and a lower "flap" placed between the revolving brush or fur-throwing mechanism and the perforated vacuum cone; and to this combination of brush, trunk, and cone his claim should be limited by the court. The defendants do not use Wells's invention, nor its principle. Wells proceeded upon the principle of disseminating (or dissolving, as it were) the particles of fur thoroughly in a flowing stream of air, the movement of which air was readily controlled by a tube, on well known principles of aerostatics or hydraulics. The words "tunnel," used in Wells's specification of 1846, was perhaps the most expressive word, as indicating a tube having a peculiar inlet and peculiar outlet, such as the ordinary liquor and other tunnels.

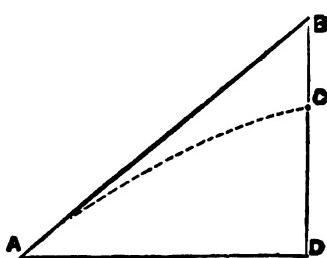
Boyden abandoned all notion of the tube and its vibrating appendage, and, instead of attempting to carry the fur by an inclosed stream of air, commenced with the idea of treating the particles of fur as susceptible of having sufficient momentum imparted to them to be projected for definite distances and definite directions *through the open air*, and bases his machine upon that idea.

Boyden's machine may be thus analyzed:

1. He employed a revolving picker instead of a brush.
2. He adopted, as he had a right to do, the revolving vacuum cone apparatus patented by Williams, and above set forth.

Argument against the Wells patent.

3. Instead of placing a "trunk," as shown in figure 20, between the disintegrating apparatus and the cone, he placed in front of and opposite to the picker a series of plates having different angles of elevation, so as to throw different portions of fibres of fur to different heights on the cone. Experience soon showed him that it could be so reduced to a system that the fur could, by a proper combination of inclined planes, of varied surface and inclination to the picker, be made to deposit itself in any manner desired. In



fixing the angles of the planes there must be a reference to the influence which gravity exerts on all projectile bodies. Thus, if a body be projected from A in the direction of the line A B, instead of pursuing the course of the line A B, gravity will cause it to constantly fall from it, and to travel in the path indicated by the dotted

line A C. Allowance is always made for this in gunnery, and a similar allowance has to be made for the influence of gravity in adjusting the Boyden planes.

The width of the planes is determined by the relative amount of fur that is required at the part of the cone intersected by each plane respectively. Thus the zone, at the base of the cone, one inch wide, as compared with a zone one inch wide at the top, would require very different amounts of fur; first, because of the much greater area of depositing surface presented at the base of the cone; and, second, because of the greater depth of deposit required at the base. Hence, the width of the plane which points towards the base of the cone is very many times wider than that which points towards the top.

As the one set of planes, when adjusted for a particular cone, will answer for any number of bodies to be formed on that cone, the machine is automatic, requiring only new planes when the cone is changed. The invention is thus described in Boyden's patent:

"This invention relates to an improved mode of directing or guiding the fur to the cone, as hereinafter fully shown and described, whereby trunks and all other comparatively complicated appliances hitherto used for the purpose are dispensed with, and an exceedingly simple and efficient device substituted therefor."

"The invention consists in placing directly in front of the picker a plate, so bent or curved that its surface will have a certain relative position with the axis of the picker and the surface of the cone, and give such a direction to the fur, as the latter is thrown on it

Argument against the Wells patent.

by the rapid motion of the picker, that the fur will be drawn properly on the cone by the exhaust or suction within it."

The Wells disintegrating arrangement is shown in figure 9, (*ante*, p. 80,) and its operation is that of *brushing* the fur while held between the feed-rollers. A *picker* was no part of his device.

II. Subject to what the court may decide on what precedes, we contend that the claim of the Wells reissued patent is void, as being for a function, principle, or result; that the term "mode of operation" was used in the claim and throughout the Wells reissued specification, No. 1087—the machine patent—to characterize the function or result produced by the machinery, and not the manner or mode in which the physical parts comprising the Wells machine are combined and co-operated to produce that result.

In the reissue—No. 1087—obtained with a view to stop the Boyden machine, after a full inspection of it, the invention of Wells is thus described:

"*The mode of operation* of the said invention of the said Henry A. Wells is such that the fur fibres are directed and controlled so as to travel from the picking and disintegrating brush towards the surface of the previous cone or other former, that they may be deposited thereon to the thickness required to make a bat of uniform thickness all around, and of the required varying thickness from brim to tip, and this mode of operation results from combining with a rotary picking and disintegrating brush, and a previous cone or equivalent former, connected with an exhausting apparatus, *suitable* means for directing and controlling the fur-bearing currents.

"*The said mode of operation*, invented by the said Henry A. Wells, is embodied in the following description of the mode of application, reference being had to the accompanying drawings."

Then follows a description of the machine as in the original patent, with these exceptions: 1. The word "hood" which occurred in the original patent is omitted, and the word "upper deflector" substituted for it. 2. The word "hinged flap" is omitted, and "lower deflector" substituted throughout. 3. A clause near the end of the original patent of 1846 is altered obviously with the intention of changing an important feature of his invention. See *ante*, p. 82, in the statement of the case, to which the reader can turn.

After describing the machine as shown in the drawing, and described in the original patent, the specification of No. 1087 resumes thus:

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"Having thus described the mode of application of the said invention of the said Henry A. Wells, as the same was successfully reduced to practice by him, I do not wish to be understood as limiting the claim of my invention to *such* mode of application; as other modes may be devised having the same *mode of operation, or principle*, and only differing from it in form, or in the substitution of *equivalent* means.

"Nor do I wish to be understood as making claim therein to the combined process of forming and hardening hat-bodies on previous cones or other analogous formers, preparatory to taking them off in a suitable condition for the after-process of sizing by felting, as this is the subject of another patent.

"1. What I claim as the invention of the said Henry A. Wells, in machinery for forming bats of fur fibres, in the manufacture of fur hat-bodies, is the *mode of operation substantially as herein described*, of forming bats of fur fibres of the required varying thickness from brim to tip, which *mode of operation* results from the combination of the rotating picking mechanism, or the *equivalent* thereof, the previous former and its exhausting mechanism, or the *equivalent* thereof, and the means for directing the fur-bearing current, or the *equivalent* thereof, as set forth."

A striking feature about this claim, and indeed about the whole reissued specification, is that while professing boldly to describe and claim a mode of operation, it neither describes what that mode of operation is, nor does it state in what parts, or combination of parts, of machinery that mode of operation is to be found.

Thus, in the first clause of the former of the passages above quoted, if the question be asked, What is the mode of operation which Wells invented? the answer would be "*such*" that the fur fibres are so directed and controlled so as to form a bat of proper thickness.

The recital of Wells's invention, in the preamble, is equivalent precisely to this: "The mode of operation of the said invention of Wells is '*such*' that the fur fibres are directed and controlled so as to form a bat, thicker at the brim than tip, and '*it results*' from combining with a revolving brush and cone '*suitable means*,' i. e., *anything* that will suit for accomplishing this result;" or, in other words, Wells's invention extends to the use of anything in connection with a revolving picker and cone which will "*suit*," and the first claim is in terms co-extensive therewith, and the patent must be held to be void, unless the claim be so construed as to be limited to the substantial devices shown in the body of the patent.

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Where an improvement is made upon a machine, the patentee can only claim the part, or combination of parts, which he has invented. It is otherwise where the invention is a process, strictly so speaking, in which the treatment of substances is entirely independent of the mechanical appliances. *Corning v. Bowden*, 15 Howard, 252. In *Neilson v. Harford*—the Neilson Hot Blast case—the invention consisted not in a machine, but in the discovery of a process; so in Goodyear's invention. This distinction was pointed out by TANEY, C. J., in *Morse v. O'Reilly*, 15 Howard, 62; and see *Neilson v. Harford*, 1 Webster's Patent Cases, 295.

III. Subject to the two former points, we contend that the reissued machine patent is void. Because—

1. It is for a different invention from that set forth in the original patent as Wells's invention.

2. The original patent was not surrendered because the description or claims were "insufficient," or inoperative through accident or mistake; but because, in the language of the oath filed with the application for reissue, it was "not fully available to A. Burr as assignee." The act of Congress does not authorize a surrender and reissue upon any such ground.

But these two grounds are not pressed, except in the event of the court declaring that the defendant's machine infringes upon that patent.

Mr. Justice GRIER delivered the opinion of the court.

The great question of the case is, whether the Boyden machine infringes the patent originally granted to Wells for his invention; and if not, whether his assignees, by the use or abuse of the right to surrender and reissue their patent, can so expand it as to cover, by *ex post facto* operation, all subsequent inventions.

The original patent to Wells purports to be for "a new and useful improvement in the machine for making hat-bodies." His specification recites that "it had long been essayed to make hat-bodies by throwing the fibres of wool, &c., by a brush or picker on a perforated cone exhausted by a fan below, to carry and hold the fibres thereon; that all these contrivances were defective." He alleges that he has improved this machine so as to remove all the objections, as proved by the test of experiment. "My improvement," he says, "consists in feeding the fur between two endless belts, &c., which present it to the action of a rotating brush, which, moving at a great velocity, throws it in a chamber or tunnel, which is gradually changed in form towards the outlet, where it assumes the shape nearly corresponding to a vertical section passing through

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the axis of the cone, this casing being provided with an aperture, immediately under the brush, through which a current of air enters," &c. The aperture of the chamber or tunnel is provided with a bonnet or hood hinged thereto, and at the bottom with a hinged flap.

Beside the *machine* thus described, he includes a claim also for a *process* which consists in covering the bat before it is removed with felted fulled cloth, &c. As our present concern is with the machine, we need not describe the process more particularly.

The patentee very properly does not claim to have first invented the art of making hats on exhausted cones, but to have improved the machinery or devices used for this purpose, in important particulars. After properly describing the several devices, the combination of which compose his improved machine, he limits his claim in exact conformity with such description. He says: "What I claim as my invention, and desire to secure by letters patent, in the machinery above described, is the arrangement of the two feeding-belts with their planes inclined, &c., substantially as described, in combination with the rotating brush and tunnel placed in front of the aperture or mouth thereof, substantially as described. I claim the chamber into which the fibres are thrown by the brush in combination with the perforated cone, &c. I also claim the employment of the hinged hood and providing the lower flap, for the purpose of regulating the delivery to increase the thickness of the bat, in combination with the hood."

This patent was first surrendered in September, 1856, by the assignee, and separate patents taken for the machine and the process: the same operation of surrender and reissue was repeated in 1860. The specification of the machine patent of 1860 (No. 1087) describes the machine much as before, premising that, in 1846, William Fosket had obtained a patent for a machine in which the fibres to be formed into a hat-body are drawn by suction through a tube into the lower part of a chamber surrounding a previous cone, the inside of which is connected with an exhausting fan; but that hat-bodies are required to be made thick at or near the brim, and thin along the crown, that the required strength may be given without making the hat too heavy. The specification thus continues: "*The said mode of operation invented by said Henry A. Wells is embodied in the following description,*" &c., and the claim is modified to suit this abstraction. "What is claimed herein as the invention of said Wells is forming bats of fur fibres by throwing the fur in properly regulated quantities, *substantially as herein described.*"

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Here we have the first experiment in the art of expansion by an equivocal claim, which may be construed a claim for the result or product of the machine, or for its principle or mode of operation. By this construction another inventor may be frightened from the course. But when challenged in a court of justice as too broad, the words "*substantially as herein described*" may be resorted to as qualifying this claim of a function, result, or principle, and arguing that as the specification described a machine, it meant nothing more.

Let us consider what was the original invention of Wells, as described and claimed by himself, without regard to this ingenious attempt by the assignee to expand it into an abstraction.

It is not within the category of those inventions which consist in a new application of certain natural forces to produce a certain result to which they had never before been applied, and which, when once pointed out, required no invention to construct devices for its application. Such inventions partake of the nature of discoveries, either found out by experiment or the result of a happy thought, which, when once expressed, is plain to all intelligent persons, who could point out at once many devices for making it effectual. Any one can perceive the difference of such a case from the invention of a labor-saving machine, which is a mere combination of certain mechanical devices to produce a desired manufacture in a cheaper or better manner. The case of *McLurg v. Kingsland*, 1 Howard, 202, will serve to elucidate this peculiar sort of inventions.

A workman in a foundry observed, in pumping water into a bucket, that the water entering at a tangent to the circle of the bucket acquired a circular motion, diminishing when it approached the centre, where bits of straw and other lighter materials would be concentrated. In casting iron rolls, the metal required to have this rotary motion for the same purpose. This effect had previously been produced by stirring the liquid metal. The thought all at once struck the mind of this observer, that the application of this principle or law of nature might be beneficially made to the casting of rolls by merely introducing the metal at the bottom of the mould at a tangent. The thought being once suggested, it required no skill or invention to devise a plan for the application of the principle. This, though classed as an invention, partook more of the nature of a discovery. In that case the court say: "We find the invention consists solely in the angular direction given to the tube through which the metal is conducted into the cylinder in which the roll is cast. Every part of the machinery is

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old ; the roll itself is no part of the invention." And yet it was a patentable invention or discovery, though it came not within the description of the statute, as "a machine, manufacture, or composition of matter."

It is plain that the invention of Wells had nothing of the nature of a discovery, or the new application of some power of nature to the perfection of an art or the operation of a machine, such as the application of the electro-galvanic fluid to the art of telegraphic writing. It was simply a concrete machine, an improvement on other known machines, and nothing more. Wells was not the first who discovered that bats of fur could be made on perforated cones by means of a vacuum or exhausted chamber. The patent to Williams, in 1833, was the first great step towards applying these natural forces to labor-saving machinery in the art of hat-making. He was the first to use the power of atmospheric pressure to deposit fur or fibrous materials on any surface. He used a carding machine to disintegrate the fur or fibres; a revolving fan to throw them on the cones; the hollow perforated cones or formers connected with devices for exhausting them; and the use of a hollow perforated cone to place over the bat, to retain it in position when removed from the exhaust. His drawing exhibited, as a substitute for a trunk or conductor, a roof without side or bottom, in the shape of a pliable deflector.

Without particularly noticing the patent of Robertson, in 1838, or of Hezekiah Miller, in 1839, we may mention that of Fosket. It is dated in January, 1846. He used a bowstring moved by machinery, in place of the rotating picker used by others. He used what he describes as "a suitable passage or tube which leads from the vicinity to what may be termed the forming or wind chamber." We refer to these previous inventions, not to show that Wells's improvement was not new or useful, but to show the state of the art, in order to properly appreciate the nature and extent of the invention of Wells.

The patent act grants a monopoly "to any one who may have discovered or invented any new and useful art, machine, manufacture, or composition of matter."

That the invention of Wells comes within the category of a "*machine*," cannot be disputed. The law requires that the specification "should set forth the principle and the several modes in which he has contemplated the application of that principle, or character by which it may be distinguished from other inventions, and shall particularly point out the part, improvement, or combination which he claims as his own invention or discovery." We

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find here no authority to grant a patent for a "principle" or a "mode of operation," or an *idea*, or any other abstraction. A machine is a concrete thing, consisting of parts, or of certain devices and combination of devices. The principle of a machine is properly defined to be "its mode of operation," or that peculiar combination of devices which distinguish it from other machines. A machine is not a principle or an idea. The use of ill-defined abstract phraseology is the frequent source of error. It requires no great ingenuity to mystify a subject by the use of abstract terms of indefinite or equivocal meaning. Because the law requires a patentee to explain the mode of operation of his peculiar machine, which distinguishes it from others, it does not authorize a patent for a "mode of operation as exhibited in a machine." Much less can any inference be drawn from the statute, that an inventor who has made an improvement in a machine, and thus effects the desired result in a better or cheaper manner than before, can include all previous inventions, and have a claim to the whole art, discovery, or machine which he has improved. All others have an equal right to make improved machines, provided they do not embody the same, or substantially the same devices, or combination of devices, which constitute the peculiar characteristics of the previous invention.

The original patent of Wells has been more than once decided by the courts to be a valid patent. The specification states clearly and correctly what the invention is; what the patentee claims as his peculiar improvement on former machines; what are the devices, or peculiar combination of them, which make it to differ, and the mode in which they operate to produce the required result. He claims all he had a right to claim as new, and no more. There is no error from "inadvertences, accident, or mistake."

The aim and object of both Wells and Boyden was to construct an automatic machine which would distribute the fur on the cones so that the bat might be thicker on certain portions than on others. This was the defect of former machines, which each proposed to remedy. Fosket, though he used a spout or tunnel, so constructed it that the crown of the hat was thicker where it ought to have been thinner.

The great and peculiar characteristic of the Wells invention is a tunnel or chamber, constructed as described. Instead of the picker, he used a rotating brush to distribute the fur from the feed-aprons, and throw it forward into the chamber which conducted it to the cones. The hinged hood and flap were devices to distribute the material in unequal quantities, to accomplish the object of

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making the bat thicker in one part than another. This machine, although an improvement on its predecessors, was not automatic, although it professed to be such. It would not distribute the fur in proper proportions without the assistance of a skillful operator. But, finally, Messrs. Burr & Taylor, after much expense and labor, devised the plan of making this chamber or trunk of thin sheet metal, regulated by a movable top, so that the deposit of the fibres could be regulated by adapting the form of the delivery aperture to any size required.

Now, the machine of Boyden has not one of the peculiar devices, or combination of devices, of the Wells machine, nor any substantial identity with it, unless by substantial identity is meant every machine which produces the same effect. These abstract phrases, "*substantial identity*," "*equivalent*," "*mode of operation*," &c., are often used in such a vague and equivocal manner, that they mystify and lead many to absurd conclusions, who will not distinguish between things that differ. That two machines produce the same effect, will not justify the assertion that they are substantially the same, or that the devices used by one are, therefore, mere equivalents for those of the other. There is nothing in the Wells machine or its devices which suggests the peculiar device employed by Boyden. His machine has no tunnel, no cap, no flap, nor any equivalent therefor, nor does it incorporate in its structure the substance of the first invention. There is nothing to be found in the specification of Wells which would ever suggest the peculiar device of the Boyden machine. As an improvement, it has more claim to originality than that of Wells. It is thus correctly described: "This invention relates to an improved mode of directing and guiding the fur, as hereinafter fully shown and described, whereby trunks and all other comparatively complicated appliances hitherto used for the purpose are dispensed with, and an exceedingly simple and efficient device substituted therefor. The invention consists in placing directly in front of the picker a plate so bent or curved that its surface will have a certain relative position with the axes of the picker and the surface of the cone, and give such a direction to the fur, as the latter is thrown on it by the rapid motion of the picker, that the fur will be drawn properly on the cone by the exhaust or suction within it."

Now, "an infringement involves substantial identity, whether that identity be described by the terms, '*same principle*,' '*same modus operandi*,' or any other. It is a copy of the thing described in the specification of the patentee, either without variation, or with such variations as are consistent with its being in substance

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the same thing. If the invention of the patentee be a machine, it will be infringed by a machine which incorporates in its structure and operation the substance of the invention; that is, by an arrangement of the mechanism which performs the same service or produces the same effect in the same way, or substantially the same way.

No one who reads the two specifications, or inspects the two machines, can aver that they contain the same combination of mechanical devices, or substantially the same, to produce the desired effect. Not one of the devices, or its equivalent, used in the one is to be found in the other, nor is its mode of operation the same. The argument used to show infringement assumes that every combination of devices in a machine which is used to produce the same effect, is necessarily an equivalent for any other combination used for the same purpose. This is a flagrant abuse of the term "equivalent." Without attempting to define this abstract term by other abstract terms, we may give examples which will best show its application to machines, as, where a simple lever is used in one, and the other substitutes a cam, or toggle-joint, or wedge for a cam, and many other cases where one mechanical power is substituted for another in a machine. In the case of *McCormick v. Talbot*, 20 Howard, 405, we have said: "If the invention claimed be itself but an improvement on a known machine by a mere change of form or combination of parts, the patentee cannot treat another as an infringer who has improved the original machine by use of a different form, or combination performing the same functions. The inventor of the first improvement cannot invoke the doctrine of equivalents to suppress all other improvements which are not colorable invasions of the first."

But it has been argued, that though not a colorable invasion of the patentee's claim, it is an evasion of his patent, which is equally injurious. If so, it is "*damnum absque injuria*." Every man has a right to make an improvement in a machine, and evade a previous patent, provided he does not invade the rights of the patentee.

Now we are of opinion that the invention of Wells was a machine which was an improvement on the machines previously known. It is not founded on any new discovery of the application of any element or power of nature to produce an effect. He was not the first to devise the application of a vacuum to cones for the purpose of forming and compressing bats for hat-bodies, nor the first to discover that such bats should be made of unequal thickness, nor of pickers to distribute the fur from the carding apparatus. He has improved this machinery by his peculiar devices of

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brush, trunk, cap, flap, &c., combined in a machine which failed to be automatic till further improved. We are of opinion, also, that the specification of Wells correctly set forth the peculiar combination of devices in the machine he invented, that, as required by the statute, he truly and correctly stated the principle or mode of operation of his machine, and the functions performed by its several devices. There was no mistake in his specification by inadvertency or accident. He had a valid patent claiming his whole invention—no more, no less.

But as the respondents are charged in the bill with infringement of a reissued patent, dated 3d December, 1860, and since the patent granted to Boyden, we must give it more special attention. It is true, we might dispose of it by saying, that as the machine of Boyden is not an infringement of the original invention of Wells, it cannot infringe the reissued patent if it be for the same invention, and if the reissued patent be not for the same invention, it is void.

Without affirming or denying the charge of respondents, that this reissued patent is fraudulent as well as void, it will be proper more particularly to notice its history and contents.

The patent to Boyden was issued on the 10th of January, 1860. The complainants were invited to examine it. They did so, accompanied by their counsel and other experts. After this, the complainants surrendered their valid patent, or rather its reissue of 1856, and have another reissue, which is now contended to have been made so elastic or expanded that it may be used to suppress all other inventions which have been or may be made to effect the same purpose. The application for this reissue, as sworn to by one of the assignees, contains the following suggestion: "That the aforesaid patent is not fully available to him as assignee; that said error has arisen from inadvertence, accident, or mistake," &c.

Previous to the Patent Act of 1836, which established a board or bureau composed of competent examiners, patents had frequently been adjudged invalid from the insufficiency of the specification; usually because by inadvertency, accident, or mistake, the patentee had not sufficiently separated the old from the new, and had claimed more than he was entitled to. Few inventors, or even learned lawyers, were capable of correctly and clearly setting forth in a specification the proper limits of the just claim of the invention. The thirteenth section was intended to remedy this evil, by permitting the patentee to surrender his defective patent, and have it renewed in proper form, "*whenever it shall be inoperative or invalid, by reason of a defective or insufficient description or specifica-*

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tion, or by reason of the patentee claiming in his specification as his own invention more than he had a right to claim as new, if the error has arisen by inadvertency, accident, or mistake," &c.

Since the date of this act, not only the Patent Office, but the bar can furnish gentlemen fully competent to the task of drawing up proper specifications, and but little liable to commit blunders from inadvertency. Specifications now seldom issue from the Patent Office to which such an imputation can be made. Nevertheless, this privilege of surrender and reissue is resorted to more frequently than ever. Formerly, when in course of investigation in a court of justice it was discovered that a patent was invalid for any of the reasons mentioned in the act, it was resorted to for protection. Now, after a patent has been declared to be valid, the specification without defect, and the claim for nothing more than the invention, after it has undergone examination for many years, and courts and juries have decided that the patent is *not* invalid, through inadvertency, accident, or mistake, the assignees come forward and make oath that the inventor's original patent is "unavailable" for some purpose unnecessary to be divulged. In the present case the purpose is transparent. The specification of this reissued patent, instead of describing first the machine and the several devices which exhibit its peculiar mode of operation in order to produce the desired effect, and stating what the patentee claims as his peculiar invention, commences by describing "*a mode of operation*" as the thing intended to be patented, and uses these words: "The said "*mode of operation*, invented by the said Henry A. Wells, is embodied in the following description of the mode of application." The claim is for the "*mode of operation, substantially as herein described.*"

We have no leisure for a further development of this novel form of patent, or how, by the use of general and abstract terms, the specification is made so elastic that it may be construed to claim only the machine, or so expanded as to include all previous or future inventions for the same purpose.

Morse was certainly the first who successfully applied the element of electro-magnetism to telegraphing. By the eighth claim of his reissued patent he claimed "not the specific machine described, but the use of the motive power of the galvanic current, however developed, for printing signs or letters at a distance, being a new application of that power of which he was the first discoverer."

On which this court remark, (*O'Reilly v. Morse*, 15 Howard, 112,) "It is impossible to misunderstand the extent of this claim,

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if it be maintained, it matters not by what process or machinery the result is accomplished. Another may possibly discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in plaintiff's specification. Yet if it is covered by this patent the inventor could not use it, nor the public have the benefit of it, &c. The court is of opinion it is too broad and not warranted by law."

In this case we have an attempt to convert an improved machine into an abstraction, a principle or mode of operation, or a still more vague and indefinite entity often resorted to in argument, an "*idea*." Those who use the latter term seem to have no fixed *idea* of what they mean by it. But it may be used as successfully to mystify a plain matter as the words used in the specification.

The Patent Bureau in this country is composed of men of scientific attainments, who examine the merits of every claimant of a patent, and decide whether in their opinion it attempts to claim a monopoly of things before known or invented. They are not expected, as formerly, to grant a patent without inquiring, to every applicant who is ready to pay the fees. Such a course of conduct would be highly injurious to the public, by furnishing means to impose on the public by false pretenses, and with threats of expensive and ruinous litigation.

The surrender of valid patents, and the granting of reissued patents thereon, with expanded or equivocal claims, where the original was clearly neither "inoperative nor invalid," and whose specification is neither "defective nor insufficient," is a great abuse of the privilege granted by the statute, and productive of great injury to the public. This privilege was not given to the patentee or his assignee in order that the patent may be rendered more elastic or expansive, and therefore more "*available*" for the suppression of all other inventions.

We concur, therefore, in the decision of the Circuit Court, that the machine of Boyden is not an infringement of the invention of Wells; and if it be an infringement of the reissued patent, that patent is void.

2. The bill claims, also, for an infringement of Wells's reissued patent for his process. This has not been much insisted on. The respondents contend that it is void, being for the same invention patented to Ponsford, in England, in 1839, and known to Wells, who was at the time in England. This allegation we find to be fully supported by the evidence, and decide accordingly.

DECREE AFFIRMED WITH COSTS.

Statement of the case.

NOTE.

At the same time with the preceding cases, or rather immediately afterwards, two other cases, appeals from the New Jersey district, between the same parties and relating to the same general subject of hat-bodies, were heard; the same counsel who had argued the first and principal case, arguing these two also; though not at length, as from the fact already mentioned, to wit, that the principles involved were the same, it was understood that the decision of these two would follow the decision of the first and principal case. The first of these two cases decided simply a point of fact, to wit, that the machine known as the "Boyden machine," and so largely discussed in the principal case, was not an infringement of a patent granted in the same department of manufacture to a certain Hopkins: no reasons being assigned; GRIER, J., who delivered the opinion of the court, remarking that, while their honors had come to a conclusion satisfactory to their own minds, it was impracticable to "vindicate" it without the use of the "large museum of exhibits in the shape of machines and models" which had been presented on the argument of all these three cases, and which "were absolutely necessary to give the court a proper understanding of the merits of the controversy." The result, therefore, was stated; the curious being referred for reasons to those given by the defendant's witness, Mr. Tredwell, examined in the case. This decree, too, was affirmed with costs.

The other of the two cases admits of a certain kind of report, now given, as on the three pages which follow.

SAME v. SAME.

No. 231.

The "Boyden machine" does not infringe the patent of A. B. Taylor. The practice of reissuing patents for the purpose of interpolating abstract generalizations, so as to cover subsequent inventions made by others, is condemned.

BILL in chancery, by which the complainant charged that the defendants were using a certain machine for the manufacture of hat-bodies, which infringed a patent originally granted in 1856 to a certain A. B. Taylor, and subsequently, in 1860, *reissued*, for hardening the bodies of hats by means of rollers while on the perforated cone upon which they had been formed, with a contrivance to give them the reciprocating motion required in the operation of being hardened. In the original patent of Taylor, of 1856, the

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claim was limited to his "*arrangement*" for hardening the body in a dry state, by "*machinery operating substantially as set forth*." The complainant, who had purchased this patent, afterwards, however, saw the machine known as Boyden's, and more particularly described in the preceding case. He then (1860) surrendered his patent and obtained a reissue, in which he altered his claim of invention from an "*arrangement of machinery*" to a claim for a "*vibrating concave surface*."

The difference between the invention as claimed in the original patent, and as subsequently set forth, as well as the general nature of his invention and claim, will appear more minutely by the juxtaposition of them in parallel columns.

Original Patent, 1856.

The object of my improvements is to harden the bat sufficiently to permit it to be removed from the perforated cone without the application of water, and to facilitate the removal of the bat from the cone without requiring the latter to be taken from its position in the machine. These improvements consist in a mechanical process of hardening the bat before it is removed from the cone, and in facilitating the removal of the bat from the cone by means of a blast of air forced through the cone. There are also various improvements in the arrangement and construction of the machinery devised by me, as will hereinafter more fully appear.

Claim.

What I claim as my invention and desire to secure by letters patent, is the arrangement for hardening the hat-body in a dry state, by *machinery operating substantially as herein set forth*.

Reissue, 1860.

My said invention, which relates to the hardening of the bat on the pervious cone on which it is formed, and while the fibres constituting the bat are held to the surface of the cone by the pressure of the surrounding air, consists in combining with a perforated cone, on which the bat of the fibres is held by the pressure of the surrounding air, a *vibrating concave surface, held by pressure, so as to act on the convex surface of the bat as it is vibrated*, by means of which combination a large segment of the bat, along its entire length, is acted upon at once by the concave surface, while, by the rotation, every part of the circumference is brought, in succession, under the hardening operation.

Claim.

What I claim as my invention is, the combination of a *vibrating concave surface, substantially as described, with an exhausted pervious cone, on which the bat of flocculent fibres is held by the pressure of the surrounding air, substantially as and for the purpose specified*.

The argument was chiefly upon the points, how far the reissue was for a principle or function as distinguished from a machine, and how far such a patent was valid; and also whether the reissue was or was not for the same thing granted in the original patent; matters discussed much more fully in the principal case.

Mr. Justice GRIER delivered the opinion of the court.

After the observations made in the preceding and principal case, it is not necessary to make further remarks on the art of extending

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patents. It may be ranked "INTER INGENUAS ARTES," and may have the claim of novelty, if not of usefulness.

In this case the invention of Taylor was the application of pressure by means of rollers, with a contrivance to give them the reciprocating motion necessary to this process of hardening. He was not the inventor of the conical cover used in hardening hat-bodies formed on a cone, nor of rubbing them by a reciprocating motion, but merely of a certain combination of devices to produce a certain effect. Both the operation and the result were well known, and the invention consisted only of the devices combined to perform the operation and produce the result. It was open to every other person to make any other combination of devices to perform the operation, which was not a mere colorable adoption of the patentee's combination. The original specification of Taylor is drawn with sufficient care and judgment to cover all the patentee knew he had invented, and the whole machine as described therein.

A comparison of the devices used in the two machines would be unintelligible without models or drawings. The Taylor patent is but for a form, or rather a combination of known devices, to perform a certain operation and produce a certain desirable effect. The combination used by Boyden is not a mere colorable or substantial adoption of the same combination of devices. It has as much claim to originality as that of Taylor; but it has a vibrating concave surface of cloth, pressing against the cone. Accordingly, the reissued patent to Taylor, or rather to Burr, got up after an examination of Boyden's machine, contained this interpolation in the description of his invention, "*A vibrating concave surface held by pressure,*" &c., &c.; and the claim extended to the "*combination of a vibrating concave surface;*" then follow the words, "*substantially as described.*" In a contest with a previous patent, the last words can be called in to qualify the first, and narrow it down to the peculiar combination of devices described; while, in assaulting a new combination, for the purpose of suppressing it, the claim may be stretched to cover every machine having a "*concave vibrating surface,*" by calling all the other parts "*equivalents.*"

It is plain that this interpolation of an abstract generalization, to render the specific description of the concrete machine more elastic, was suggested by an examination of the Boyden machine. If the same construction be given to the claim of Taylor, as it would necessarily invoke a contest with preceding inventions, to save it from the charge of being too broad, the Boyden machine would be properly pronounced as no infringement: on the contrary, such a construction of it as would include the Boyden machine, would

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make it void for being too broad. It matters little on which horn of this dilemma the case be put, the result must necessarily be the same.

DECREE AFFIRMED WITH COSTS.

HUMISTON v. STAINTHORP.

(2 Wallace, 106.)

A decree in chancery, awarding to a patentee a permanent injunction, and for an account of gains and profits, and that the cause be referred to a master to take and state the amount, and to report to the court, is not a final decree, within the meaning of the act of Congress allowing an appeal on a final decree to this court.

STAINTHORP and Seguin had filed a bill in the Circuit Court for the Northern District of New York, against Humiston, for infringing a patent for moulding candles; and had obtained a decree against him.

The decree was that the complainants were entitled to a *permanent injunction*, and for an account of gains and profits, and that the cause be *referred to a master to take and state the amount and report to the court*.

A motion was now made to dismiss the cause for want of jurisdiction.

Mr. Gifford, in favor of the motion of dismissal: An appeal lies only from a final decree; this is an interlocutory one. A final decree in equity is one which finally decides and disposes of the whole merits of the case, and reserves no questions or directions for the future judgment of the court from which an appeal could be taken. This court will not allow a case to be divided up into a plurality of appeals.

In *The Palmyra*, 10 Wheaton, 502, restitution with costs and damages was decreed, and an appeal taken before the damages had been assessed. The court held that the decree was not final, and dismissed it. They say, "The decree of the Circuit Court was not final in the sense of the act of Congress. The damages remain undisposed of, and an appeal may still lie upon that part of the decree awarding damages."

The case of *Barnard et al. v. Gibson*, 7 Howard, 650, was one on letters patent. The decree referred it to a master to ascertain and report the damages. An appeal was taken; a motion made to dismiss it, and the motion was granted. The court say, "The decree

Argument against the motion.

in the case under consideration is not final within the decisions of the court. The injunction prayed for was made perpetual, but there was a reference to a master to ascertain the damages by reason of the infringement.

In *Perkins v. Fourniquet*, 6 Howard, 206, the decree was that the complainant was entitled to two sevenths of certain property, and referred it to a master to take and report an account of it, reserving all other questions until the coming in of the master's report. It was held that this was not a final decree on which an appeal could be taken.

In *Pulliam et al. v. Christian*, 6 Howard, 209, the decree set aside a deed and directed an account from trustees. This was held not to be a final decree, and an appeal from it was dismissed.

In *Craighead et al. v. Wilson*, 18 Howard, 199, a bill was filed claiming property as heirs. A decree was made, which, among other things, referred it to a master to take an account. The court held that this decree was interlocutory, and that no final decree could be made until after the coming in of the master's report, and the appeal was dismissed.

In *Crawford v. Points*, 13 Howard, 11, a decree was made directing an account. An appeal was taken before the accounting. On a motion to dismiss the appeal, the court say, "The decree is not final. . . An account is directed to be taken of the rents and profits, &c. While these things remain to be done, the decree is not final, and no appeal from it would lie to this court."

In *Beebe et al. v. Russell*, 19 Howard, 285, the court thus distinguishes between the two sorts of decrees: "A decree is understood to be interlocutory whenever an inquiry as to matter of law or fact is directed, preparatory to a final decision. When a decree finally decides and disposes of the whole merits of the cause, and reserves no further questions or directions for the further judgment of the court, so that it will not be necessary to bring the cause again before the court for its final decision, it is a final decree.

These cases seem conclusive.

Mr. Norton, contra:

I. The precise question whether an appeal may be taken from such a decree does not seem to have arisen in this court, but the principles which have controlled the decisions concerning appeals, establish the right of appeal from the decree herein.

In *Ray v. Law*, 3 Cranch, 179, it was held, (Marshall, C. J.,) "That a decree for a sale under a mortgage is such a final decree as may be appealed from," although in such cases there follows a

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decree confirming the sale, and it may be for execution for a deficiency. That case was followed in *Whiting v. Bank of United States*, 13 Peters, 6, the court saying in reference thereto, "This decision must have been made upon the general ground that a decree, *final* upon the merits of the controversy between the parties, is a decree upon which a bill of review would lie, without and independent of any ulterior proceedings."

In *Forgay v. Conrad*, 6 Howard, 201, where the decree set aside as void certain deeds of lands and slaves, and directed an account of profits, and expressly retained a part of the bill for further decree, it was held that an appeal from same was well taken.

In *Barnard v. Gibson*, 7 Howard, 653, relied on by the other side, where the decree was for an injunction and an account of profits, and expressly reserved "the question of costs and all other questions" not specifically passed upon, it was held that from such decree an appeal would not lie; and in that case this court did not undertake to reverse its former decisions, but to abide thereby.

Now the decree in this case, though different from that in either of the cases thus referred to, is much nearer that in *Forgay v. Conrad* than the one in *Barnard v. Gibson*, for it fully disposes of the merits, without reserving any question whatever, and leaves nothing uncompleted but an accounting, like that in *Forgay v. Conrad*; and upon the principle established in those cases, the appeal was well taken. That principle is, that whenever a decree decides the merits of the controversy, it is *final*, for the purposes of an appeal, though ulterior proceedings have to be had and a further or additional decree yet remains to be made. Thus in *Forgay v. Conrad*, the court say of the decree therein, "undoubtedly it is not final, in the strict technical sense of the term," and then, adopting a wider view of the act of Congress, lay down the principle that when a decree decides the right in controversy, and permits it to be carried into execution, it is *pro tanto, final* for the purposes of an appeal. And the only way of reconciling *Barnard v. Gibson* with that case is, that it reserved the question of costs and other questions.

II. An appeal from such a decree as this is should be allowed:

1st. Because it disposes of the entire merits, and leaves nothing but a mere accounting.

2d. Because the court below has power to render and enforce such a decree, (and the practice of rendering and enforcing such decrees has become very general,) and unless an appeal be allowed therefrom, the right of appeal to this court is virtually annulled in this class of cases, where the decree is for the complainant.

Statement of the case.

3d. Because the accounting in such cases is necessarily tedious and expensive, and should therefore be postponed until the merits are finally disposed of; for if the decree be reversed the accounting becomes a needless waste of time and money, and even if it be modified, as to the nature or extent of the patent or of the infringement of same, such accounting becomes almost equally useless.

Mr. Justice NELSON delivered the opinion of the court, and after stating the case said :

The decree is not final within the act of Congress providing for appeals to this court, according to a long and well-settled class of cases, some of which we only need refer to in disposing of the case. *The Palmyra*, 10 Wheaton, 502; *Barnard et al. v. Gibson*, 7 Howard, 650; *Crawford v. Points*, 13 Id., 11; *Craighead v. Wilson*, 18 Id., 199; *Beebe et al v. Russell*, 19 Id., 283.

MOTION GRANTED.

HECKERS v. FOWLER.

(2 Wallace, 123.)

1. A declaration in covenant by a patentee, setting out a sealed contract by defendant to pay him a certain tariff in consideration of an exclusive right to use the patent within a certain district, is good.
2. The practice of referring pending actions under a rule of court to arbitrators appointed by the court, with the consent of both parties, is a mode of prosecuting a suit to judgment, as well established and as fully warranted as a trial by jury.
3. A reference to hear and determine all the issues in a case does not require the referee to *report* his finding in all. It is answered by his hearing and determining all and reporting the result.
4. A judgment in the Circuit Court, entered by the clerk without objection upon the report of the referee and pursuant to order of court and the agreement of parties, is valid and can be enforced.

JOHN FOWLER brought suit in the Circuit Court for the Southern District of New York, against John and George Hecker, to recover damages for a breach of covenant. The declaration alleged that the plaintiff, who was the patentee of an improvement in making flour, had granted to the Heckers the right to supply a particular district with such flour, &c., paying so much per barrel. Defense, that the patent was worthless, and that the plaintiff had failed to maintain its validity at his own cost, as he had agreed to do. Replication; issue, and joinder. While the case was thus pending, the attorneys of the parties agreed to refer it to a "referee, to hear and determine the same, and all issues therein, with the same powers as the court, and that an order be entered making such

Argument for the plaintiff in error.

reference; and that the report of said referee have the same force and effect as a judgment of said court." One of the judges accordingly "ordered that the cause be referred to H. Cramm, Esq., to hear and determine *all the issues herein*, with the fullest powers ordinarily given to referees; and that on filing the report of the said referee with the clerk of the court, judgment be entered in conformity therewith, the same as if the cause had been tried before the court." The referee heard the case, and without stating what his findings were upon any of the several issues presented in the pleadings, made the finding, simply and generally, that there was due to plaintiff, John Fowler, from the defendants, John and George Hecker, the sum of \$9,500, besides costs, all which he "reported" to the court. On this, the attorneys of Fowler drew up the form of a judgment, and without the presence or action of the court, except the order of reference already alluded to, filed it with the clerk, who thereon entered judgment, as a judgment of the court, for the amount reported, with costs. The defendant took this writ of error.

It is necessary here to state that, by the code of New York, § 272, a referee is clothed with the attributes of a judge. A trial by him is to be conducted in the same manner as a trial by the court; he may grant adjournments, allow amendments, compel the attendance of witnesses. His decisions may be excepted to and revised, as in cases of appeal from courts of record. It is also enacted that "the report of the referees upon the whole issue shall stand as the decision of the court, and judgment may be entered thereon in the same manner as if the action had been tried by the court."

Mr. Norton, for the plaintiff in error: No objection, we think, can properly be taken to the right of this court to entertain the matters here presented; although it might be suggested that the facts in this case not having been found either by a general or special verdict, nor agreed upon in a case stated, and there being no bill of exceptions, there are no questions open to revision here, and hence that this court will affirm the judgment of the court below, of course. We apprehend it to be clear, however, that while this court will not review the judgment of inferior courts made without the intervention of juries, or on a case stated, it will, at the same time, exercise its superintending care in preventing the judgments of State judicial officers from being interpolated into the records of the courts of the United States, and being enforced by the process of those courts.

Assuming, then, the jurisdiction to exist, we observe:

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1. That the declaration, which relies on a contract in restraint of trade, does not set forth a sufficient cause of action. But,

2. The case presents to us a record of mixed proceedings, commenced before a judicial officer of the United States, conducted by a judicial officer unknown to the courts of the United States, whose judgment (or a paper purporting to be a judgment) is filed in the office of the United States Circuit Court, attached to the pleadings by its clerk, and made a part of the record in this case. Will such a proceeding be allowed? State courts are authorized by statutes to have such proceedings; but without statute the proceedings would be very irregular, and there is no statute of the United States which authorizes them in the Federal courts. This court has, indeed, decided that if the parties agree to submit the trial both of fact and law to the judge, they constitute him an arbitrator or referee, whose award must be final and conclusive between them; but no consent can constitute this court appellate arbitrators. But in this and in other cases which might be cited the judgment was rendered by a judge created by the laws of the United States, whose function it is to pronounce judgments in the courts of the United States. In this record there is no such judgment. Whatever is rendered, is rendered by a person wholly *unjudicial*, and *dehors* the tribunal; or coming into it only *pro hac vice*. Even if it is a judgment in the Circuit Court, it is not a judgment of the court.

3. The referee did not decide the case in conformity with the order of court. He did not "determine all the issues of the case;" but made a single and general finding that there was due such a sum.

4. But even the referee's judgment was not properly entered. In fact, though he made a report, he gave no judgment. The clerk gave the judgment. It is, therefore, invalid, and cannot be enforced.

Mr. Andrews, contra.

Mr. Justice CLIFFORD delivered the opinion of the court.

This is a writ of error to the Circuit Court of the United States for the Southern District of New York.

Suit was brought in this case by the present defendant, and judgment was rendered in his favor in the court below. Action was referred, under a rule of court, by consent of the parties, and the judgment in the case was rendered upon the report of the referee, made in pursuance of the rule of reference. Original de-

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fendants sued out this writ of error, and now seek to reverse the judgment upon the several grounds hereinafter mentioned. Errors assigned at the argument were in substance and effect as follows:

1. That the declaration and the matters therein contained are not sufficient in law to enable the plaintiff to maintain the action.
2. That the Circuit Court erred in passing the order that the action should be referred, and that the matters in controversy should be heard and determined by a referee.
3. That the action of the referee was erroneous, because he did not determine all or any of the issues involved in the pleadings.
4. That the judgment set forth in the transcript is invalid, and not such a one as can be enforced in the Circuit Court of the United States.

1. First objection was not much pressed at the argument, and is entirely without merit, as will be obvious from a brief examination of the record. Plaintiff was assignor and patentee of a certain invention, described as a new and useful improvement in the preparation of flour for the making of bread; and the substance of the declaration was that the defendants, in consideration that the plaintiff had granted to them the exclusive right to supply a certain district with such prepared flour, and to manufacture and vend therein the patented ingredients used in the preparation of the same, promised to account with and pay over to the plaintiff a certain tariff for every barrel of flour so supplied, and for the patented ingredients, when manufactured and sold separately, to be used in its preparation. Agreement was in writing and under seal, and the action was, covenant broken to recover damages for the neglect and refusal to account and pay the tariff according to the terms of the contract. Pending the suit, the defendants appeared and pleaded to the merits. They made no objection to the declaration, and if they had, it must have been overruled, as it is in all aspects sufficient and well drawn.

2. Substance of the second objection is, that the Circuit Court erred in allowing the reference. Defense, among other things, was that the plaintiff agreed to maintain the validity of the patent at his own expense during the period the defendants should be engaged in the business, and that he neglected and refused so to do, and that the patent was invalid and worthless. Replication of the plaintiff reaffirmed the facts set forth in the declaration, and tendered an issue to the country, which was duly joined by the defendants. Pleadings being closed, the parties agreed in writing to refer the cause to a referee, "to hear and determine the same, and all the issues therein, with the same powers as the court, and

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that an order be entered making such reference, and that the report of the referee have the same force and effect as a judgment of the court."

Following that agreement is the order of the court allowing the reference, which is the subject of complaint. Recital of the record is, that on reading and filing the agreement "the court ordered that the cause be referred" to the referee therein named, to hear and determine all issues therein with the fullest powers ordinarily given to referees, and that on filing the report of the said referee with the clerk of the court, judgment be entered in conformity therewith the same as if said cause had been heard before the court, and the attorneys of the parties annexed their consent in writing to the order.

Intention of the court and of the parties was to refer the action; and the requirement of the referee was that he should hear and determine the matters in controversy, and make his report to the court in which the action was pending. Defendants insist that such a reference of a pending suit in the Circuit Court of the United States is invalid, because such courts have no power to authorize such a proceeding. Such is the substance of the several propositions submitted by the defendants on this branch of the case. They admit that the State courts have such powers, but insist that the power is derived from statute, and that the Circuit Courts cannot exercise it, because there is no act of Congress which confers any such authority.

Where the United States are plaintiffs, or an alien is a party, or the suit is between a citizen of the State where the suit is brought and a citizen of another State, the Circuit Courts of the United States have original cognizance, concurrent with the courts of the several States, of all suits of a civil nature at common law or in equity, where the matter in dispute exceeds, exclusive of costs, the sum or value of five hundred dollars. Record shows that the plaintiff was an alien, and that the defendants were citizens of the State where the suit was brought. Amount in dispute exceeds the sum or value of five hundred dollars, and inasmuch as the suit was of a civil nature, at common law, the jurisdiction of the court was clear beyond cavil. 1 Stat. at Large, 78.

Scope of the objection, however, does not directly involve the question of jurisdiction, but has respect to the mode of trial, as substituting the report of a referee for the verdict of a jury. Circuit Courts, as well as all other Federal courts, have authority to make and establish all necessary rules for the orderly conducting business in the said courts, provided such rules are not repugnant

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to the laws of the United States. Practice of referring pending actions is coeval with the organization of our judicial system, and the defendants do not venture the suggestion that the practice is repugnant to any act of Congress. On the contrary, this court held, in the case of the *Alexandria Canal Company v. Swan*, 5 Howard, 89, that a trial by arbitrators, appointed by the court, with the consent of both parties, was one of the modes of prosecuting a suit to judgment as well established and as fully warranted by law as a trial by jury, and, in the judgment of this court, there can be no doubt of the correctness of that proposition.

Doubts were, nevertheless, entertained whether a bill of exceptions would lie to the ruling of the Circuit Court in overruling the objections filed by the losing party to the acceptance of the report or award of a referee appointed under a rule of court. *York and Cumberland Railroad Company v. Myers*, 18 Howard, 246. Opinion of the court in that case shows that the action, at the time of the reference, was pending in the Circuit Court of the United States for the District of Maine. Myers brought the suit, and the parties, before trial, agreed to refer the action to three persons, to be appointed by the court. Presiding justice named three persons as referees, and the rule issued by the clerk provided that their report, or the report of a majority of them, "was to be made to the court as soon as may be, and that judgment thereon was to be final, and execution to issue accordingly." Subsequently, one of the persons so appointed was, with the leave of the court, authorized by the parties to sit alone, and he made a report awarding damages to the plaintiff.

Corporation defendants, when the report was made, submitted written objections to the acceptance of the same, and examined the referee in support of the objections. Question presented was, whether the report should be accepted or rejected; but the circuit judge overruled the objections, accepted the report, and rendered judgment for the plaintiff for the amount reported by the referee. Defendants excepted to the rulings of the court, and sued out a writ of error to reverse the judgment. Preliminary objection in this court was that the bill of exceptions would not lie, because the proceedings, as it was insisted, had been irregular; but this court held otherwise, and decided the cause upon the merits. Conclusion of the court was that the equity of the statute, allowing a bill of exceptions in courts of common law, embraces all such judgments or opinions of the court arising in the course of a cause as are the subjects of revision by an appellate court, and which do not otherwise appear on the record. *Struther v. Hutchinson*, 4 Bing-

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ham's New Cases, 83; *Ford v. Potts*, 1 Halsted, 388; *Nesbitt v. Dallam*, 7 Gill & Johnson, 494.

Subordinate tribunal, say the court, must ascertain the facts upon which the judgment or opinion excepted to is founded, which undoubtedly is correct for the reason there given, that this court cannot determine, in cases at common law, the weight or effect of evidence, nor decide mixed questions of law and fact. Allusion is then made to the fact, that appellate courts in other jurisdictions are accustomed to revise such judgments and opinions, and the court say, "Upon principle we can see no objection to the introduction of the same practice into the courts of the United States, under the limitations we have indicated." Taken as a whole, that case is decisive of the question under consideration. But it is a mistake to suppose that the practice referred to was first sanctioned in this court by the opinion in that case. Ample authority for it is to be found in a decision of this court, pronounced more than forty years before the question in that case was argued. Reference is made to the case of *Thornton v. Carson*, 7 Cranch, 596, in which the opinion was given by Chief Justice Marshall. Statement of the case shows that two pending actions were referred by consent under a rule of court. Arbitrators made an award. Effect of the award was that the defendant was to pay to the plaintiff (Carson) the amount of the bonds in suit, unless by a certain day he made a conveyance to the plaintiff of the property described in the award; in which latter event he was to receive from the plaintiff a transfer of certain shares in a mining company, and to be discharged from the payment of the money, an entry to that effect to be made in the suits. Defendant failed to perform the act which would entitle him to such an entry in the case, and consequently became liable to pay the sums awarded by the referee. Oral objections were made to the acceptance of the award, but the court overruled the objections, and rendered judgment for the plaintiff on the award for the amount of the money awarded. None of the evidence introduced when the award was accepted appeared in the record, and no bill of exceptions was tendered to the ruling of the court, but the defendant removed the cause into this court by a writ of error. Under those circumstances, this court refused to revise the rulings of the Circuit Court; but, in disposing of the case, the court say, if he, the original plaintiff, failed to do that which warranted the court in entering judgment on the award, it was the duty of the complaining party to have shown that fact as a cause against entering judgment, and to have spread all the facts upon the record, which would enable this court to decide whether

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the court below acted correctly or not. Various other objections were also taken to the proceedings; but they were all overruled, and the judgment was affirmed. Similar views have been expressed by this court on other occasions, but it is not thought necessary to do more than to refer to the other cases, as those already examined are believed to be decisive. *Carnochan et al. v. Christie et al.*, 11 Wheaton, 446; *Lutz v. Linthicum*, 8 Peters, 176; *Buller v. Mayor of New York*, 7 Hill, 329; *Ward v. American Bank*, 7 Metcalf, 486; *Water Power Company v. Gray*, 6 Id., 174.

Practice of referring pending actions under a rule of court, by consent of parties, was well known at common law, and the report of the referees appointed, when regularly made to the court, pursuant to the rule of reference, and duly accepted, is now universally regarded in the State courts as the proper foundation of judgment. *Yates v. Russell*, 17 Johnson, 468; *Hall v. Mister*, Salkeld, 84; *Bank of Monroe v. Wadner*, 11 Paige, 533; *Green v. Palshen*, 13 Wendell, 295; *Caldwell on Arbitration*, 359; *Feeler v. Heath*, 11 Wendell, 482; *Graves v. Fisher*, 5 Maine, 70; *Miller v. Miller*, 2 Pickering, 570; *Com. v. Pejepscut Proprietors*, 7 Massachusetts, 417, 420.

3. Third objection is, that the action of the referee was erroneous, because he did not determine all of the issues between the parties. Evidently the objection is founded in a mistaken view of the duty of the referee as prescribed in the rule of reference. He was not required, either by the agreement of the parties or by the order of the court, to report specially what his finding was upon the several issues presented in the pleadings. His duty was to determine all the issues, and to report the result of his finding. Referee reported that, having heard and examined the matters in controversy in the cause, and having examined on oath the several witnesses produced, there was due to the plaintiff the sum of nine thousand and five hundred dollars, besides the costs of suit. Presumption is, that he did determine all the issues, and inasmuch as there was no evidence to the contrary, the conclusion must be to the same effect.

4. Fourth objection is, that the judgment is invalid, and cannot be enforced. Defect suggested is, that the judgment was rendered by the clerk and not by the court; but the record, when properly understood, does not sustain the objection. Judgments are always entered by the clerk under the authority of the court. Prevailing party is entitled to judgment, and it is not the practice in the Circuit Courts to require a rule for judgment to be entered in any case, as is the practice in some of the courts in the parent country. 2 Tidd's Practice, p. 903; Archbold's Practice, by Chitty, 521.

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Entry of judgment in term time is never made except by leave of court; but the motion need not be in writing, and the order of the court is seldom or never entered in the minutes. When the term closes, judgments are entered by the clerk under the general order without motion; and yet no one ever doubted that a judgment entered under such circumstances was the act of the court and not of the clerk. Reference of a pending action is ordinarily perfected in term time by an entry made under the case by the clerk, at the request of the parties, that it is "referred," and with the addition of nothing else except the names of the referees, or it may be done, as it was in this case, by a written agreement, signed by the parties or their attorneys, and filed in the case. When that is done a rule is then issued, or the order of the court may be entered in the minutes, as was done in this record. Duty of the referee is to notify and hear the parties, and then to determine the controversy, and make a report or award to the court in which the action is pending, and from which the rule was issued. Judgment, however, cannot in general be entered in conformity to the report or award until it is accepted or confirmed by the court. *Brown v. Cochran*, 1 New Hampshire, 200. Reason for the rule is, that whenever it is presented, and before it is accepted, the party against whom it is made may object to its acceptance; but if required by the court, he must reduce his objections to writing, and file them in the case. Hearing is then had, and after the hearing the court may accept or reject the report; or, if either party desires it, the report may, for good cause shown, be recommitted. Such a report of referees is in many respects a substitute for the verdict of a jury. Where there is no agreement to that effect, no judgment can be entered on such a report until the same has been accepted. Present case, however, must be determined upon the peculiar circumstances disclosed in the record. Parties agreed that the report of the referee should have the same force and effect as a judgment of the court, and the court ordered, by consent of parties, that on filing the report with the clerk of the court, judgment should be entered in conformity therewith, the same as if the cause had been tried before the court. Referee accordingly made the report and filed it as required, and thereupon the clerk entered the judgment pursuant to the order of the court and the agreement of the parties. Proceedings of the referee were correct, and the losing party made no objections to the report. *Hughes v. Bywater*, 4 Hill, 551. Judgment having been entered without objection, and pursuant to the order of the court and the agreement of the parties, it is not possible to hold that there is any error in the record. *Bank of Monroe v. Wadner*, 11 Paige, 533.

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Theory of the objection is unfounded in fact, and upon that ground it is overruled. The judgment of the Circuit Court is, therefore,

AFFIRMED WITH COSTS.

CASE v. BROWN.

(2 Wallace, 230.)

A claim for a combination of several devices, so combined together as to produce a particular result, is not good as a claim for "*any mode of combining those devices which would produce that result,*" and can only be sustained as a valid claim for the peculiar combination of devices invented and described. *Burr v. Duryee*, 1 Wallace, 553, affirmed and applied.

AMONG the inventions of our country that have assumed great value—especially in the regions of the West, where Indian corn is largely produced—are those known as CORN-PLANTERS. The machine consists of a mechanism resembling somewhat, in external appearance, and in section view, a high plough on wheels. It is drawn by a horse, while a man walks behind and manages it. The object is to plant corn at spots, which spots shall be both equidistant and in rows.

The corn to be planted is placed in a hopper or sort of box, which is fixed in the body of the machine; and, at proper intervals, as the machine is drawn by the horse, the grains are permitted to enter and fall through a valve, *at the base* of a short vertical spout, to the ground, another valve being at the top of the spout. If the grains were permitted to fall through the *full length* of the spout as the machine passed on, by a valve at the *top only* of the spout, they would not reach the ground exactly under the place at which the valve was opened; inasmuch as in the interval of time that the grain was descending through the spout, the machine would have passed over a certain space of ground in being drawn along by the horse. But, by employing *two valves*, one opening into the upper end of the spout from the hopper, and one at the bottom of the spout *in close proximity* with the ground, correct dropping is insured; the forward motion of the machine being compensated for by the double valves.

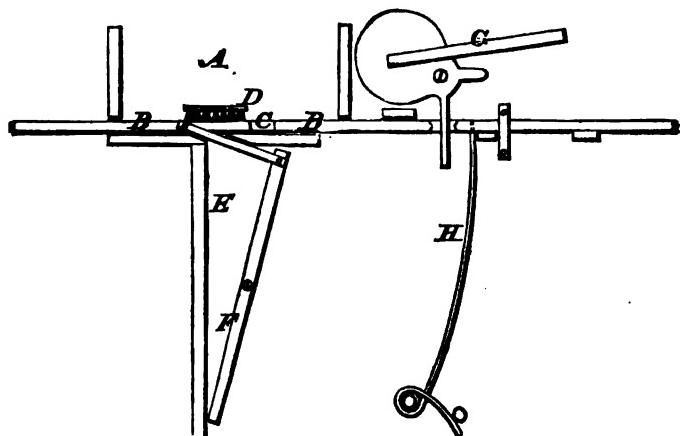
A certain Jarvis Case had invented one of these corn-planters, and took a patent for it in January, 1845. In *this* patent he limited his claim to the particular combination of parts which constituted his machine. In November, 1858, he surrendered his patent

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and obtained a reissue with a more expanded claim. That claim was thus:

"I claim, in combination with a corn-planting machine that is constantly moved over the ground, and drops the grain intermittently, *the so combining of two slides, one of which is at or near the seed-hopper, and the other at or near the ground, or their equivalents, with a lever, as that the operator or attendant on the machine can open said slides at the proper time to deposit the seed and prepare a new charge by the double dropping herein specified.*"

The cut below shows in section the combination or arrangement.



A is the hopper which carries the corn, B the seed-slide or valve leading from the hopper to the seed-tube E, C is the seed-cup in the seed-slide, D is the cut-off in the hopper, E is the seed-tube, F is the slide or valve to seed-tube, G is the hand lever by which the tubes are opened and closed in the plaintiff's machine, H the recoil-spring by which the slide-valves B and the valve F are simultaneously closed when the hand is removed from lever G.*

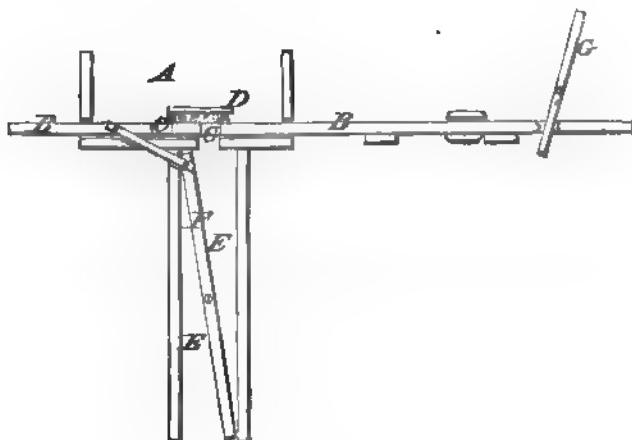
In this machine of Case's a lever G, of a peculiar form, was used, which, by being pressed down, effected two operations, viz: it carried the charge of grain out of the seed-box, and dropped it into the tube E, and it raised the slide F to let out the previously dropped charge. Thus the same operation that planted one charge put the next succeeding charge in close proximity to the ground, so

*This recoil spring, H, relieved the operator from replacing or pushing back the lever with his extended arm; a matter which, when to be performed many hundred times a day, makes a large demand on muscular strength. With the recoil-spring, one muscular effort did the work of two.

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that it had but a few inches to fall when the valve or slide F was opened.

About the same time that Case originally invented his machine, a person named Brown invented one also, and got a patent in May, 1855. The parties were independent inventors. In its essential features, Brown's machine differed from Case's in not employing a lever having a weight or a spring, or automatic device to return it to its position and close the valves, although the same final result, namely, the simultaneous double dropping of the seed, was accomplished by one motion of the hand of the operator in both cases. The cut below will exhibit the combination and arrangement in this second invention.



A here represents the hopper carrying the grain, B the side-valve, and C the seed-cup between the hopper and the seed-tube E, and F the slide-valve which permits the seed to pass from the lower end of the seed-tube to the ground. G is the lever. When the upper end of this lever G is moved from the position shown in the drawing towards the hopper A, it is evident that the grain-cup C would be carried over and discharged into the tube E, and the same movement of the lever G would move the side-valve F so as to permit the grain which it retained at its lower extremity to fall to the ground. Each movement of the lever, with this *double seed-tube*, whether forward or back, produced a "drop."

Thus a similar double dropping of grain was accomplished in this machine of Brown as was accomplished in this machine of Case; but there was no spring or automatic recoil arrangement attached to the lever G, for restoring it to its former position, as it

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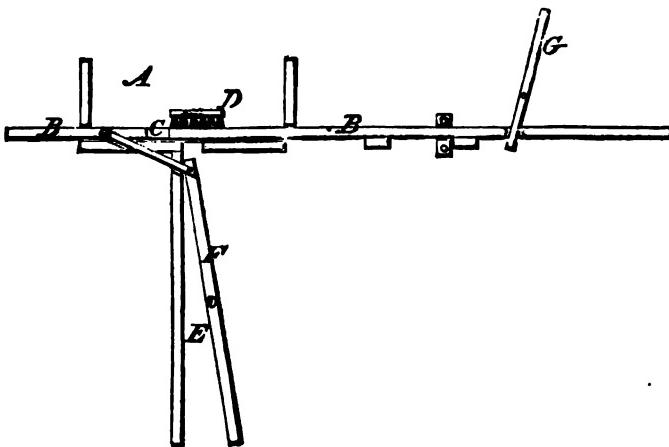
is on the plaintiff's machine. It required to be worked by hand in both directions.

Case now sued Brown, in the Circuit Court of the Northern District of Illinois, for infringing his reissued patent. The action was case. On this trial his counsel requested the court to charge the jury—

"That the plaintiff, in and by his patent, claims any mode of combining a valve in the seed-tube, and a valve in the seed-hopper, or their equivalents, with a lever, as that the operator may *by one operation, or the application of one muscular force*, carry a charge of corn from the seed-hopper into the seed tube, and arrest it at the lower valve, and *by the same operation or muscular force*, let out from the lower valve and drop into the furrow a charge of corn, previously dropped and lying at the lower valve.

"That the plaintiff by his patent is not confined to the *peculiar means of returning the seed-slide* which he has adopted in his said model. That his claim covers *any arrangement* to operate the valves and lever which will produce the result, although he may not in the other machine employ the rock shaft and weighted lever, or any automatic element. He may employ some substitute for the automatic element, so that he *by one operation, or the application of a single muscular force* applied to the lever, drops from the lower valve, and supplies a new charge to take its place, *by the same operation or muscular force* so as aforesaid applied to the lever, combined with the valve at the seed-tube and the valve at the seed-hopper, or their equivalents."

[As bearing on the interpretation asked for by defendant and



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adopted by the court below, it is to be noted, that on the question of the prior state of the art to the plaintiff's invention, the defendant proved at the trial that a seed-planting machine had been invented and used to a limited extent, and a description thereof filed in the Patent Office, as early as 1852, by one Charles Finn, in which was combined the two slides and lever, for accomplishing the same final result as in the plaintiff's machine. A sectional drawing of Finn's machine is given below, in which the corresponding letters are used as in the other two plates.

A, being the hopper, B the slide-valve, C the seed-cup, E the seed-tube, F the slide-valve, and G the lever—this arrangement agreed with the plaintiff's arrangement in nearly every respect in which the defendant's machine did, and differed from the plaintiff's in having no automatic recoil attachment to the lever, such as a weight or spring.]

The court below refused to charge as requested by the plaintiff, but charged in substance that the thing patented to him, was a technical combination consisting of certain elements, and that to constitute an infringement, all these elements must be used by the defendant; that among these, is that particular kind of lever G, described by the patentee, which is so combined with a weight or spring, that when the valve has been opened by the hand of the operator moving the lever in one direction, the weight, acting through the lever and moving it in the reverse direction, causes the valves to close; and that unless the defendant's machine employs a lever having the same mode of operation, that is to say, the peculiar arrangement described by the patentee for moving it in the reverse direction, or some other arrangement which is a mere mechanical equivalent therefor, the patent is not infringed.

The language of the court as quoted exactly was this:

"In order to constitute an infringement, the whole combination must be used, because he claims not the various parts, but the whole combination together. The plaintiff cannot claim what is called double dropping of corn—that is a *result* or an *effect*. He can only claim the double dropping by the particular mode which he has devised. Any one can produce the same results by other and different modes, and still not violate the claim of the plaintiff. In order to constitute a violation, there must be a use of the same methods substantially as those adopted by plaintiff. A mere change of form, for example, in the lever and its mode of operation, the adoption of some equivalent suggested by mere mechanical skill, would not prevent it from being an infringement; otherwise, if the

Argument for the defendant in error.

change were one of substance and requiring the exercise of inventive power."

Thus the charge made the case turn on the question, whether the defendant employed in his machine, as one element of his combination, a lever having the same mode of operation as that of the plaintiff, to wit, having two motions in opposite directions at every dropping, one produced by the hand of the operator to open the valves, and the other by an automatic arrangement to close them.

Of course, the charge was in opposition to the plaintiff's request; and the jury having found a verdict for the defendant, the case was brought by writ of error to this court.

Mr. Roberts, for Case, the plaintiff in error: The court erred in its charge by withdrawing the question of fact from the jury, whether the machine of the defendant did not so combine the valve and lever as to produce the result substantially produced by the plaintiff's; as it manifestly did in limiting them to the inquiry, whether defendant employed a lever with such arrangements as required two motions to plant each hill of corn.

The error was in construing the claim to be for a technical combination, and resolving the advice into its rudimental parts, and inquiring whether the defendant used all of these parts, and whether each part had a mode of operation substantially the same in the two machines. That this was an error, numerous cases show. *Carver v. Braintree Manufacturing Company*, 2 Story, 432; *Winans v. Denmead*, 15 Howard, 330; *Wilbur v. Beecher*, 2 Blatchford, 132; *Foster v. Moore*, 1 Curtis, 279.

Mr. Goodwin, contra, for Brown: It is the duty of the court to construe the patent on the maxim "*ut magis res valeat quam pereat*" and therefore in the course of a *nisi prius* trial, the judge will apply to such construction the state of the art, the surrounding circumstances in which the inventor is placed, and the previous existence of some things mentioned or referred to in the patent, as developed on the evidence. *Winans v. Denmead*, 15 Howard, 338; *Brooks v. Fiske*, Id., 215; *Hogg v. Emerson*, 6 Id., 437; *Neilson v. Harford*, Webster's Patent Cases, 350, 370; *Morris v. Barret*, per Leavitt, J., Ohio, 1858; *Whipple v. Middlesex Company*, Sprague, J., Massachusetts, 1859; *Ames v. Howard*, 1 Sumner, 485; *Buck v. Hermance*, 1 Blatchford, 401.

In order to distinguish the plaintiff's invention from that of Finn, the judge was obliged to limit the claim as he did, and in order to constitute a violation of the plaintiff's patent thus con-

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strued by the court, it was necessary that a party should use the whole combination, that is to say, the tube-valves *and lever combined substantially in the same way* as the plaintiff had combined them, and if any one of the elements necessary to constitute the entire combination were left out, then there was no infringement, leaving the question as to the identity of the plaintiff's and defendant's machines fairly to the jury. *Eames v. Godfrey*, 1 Wallace, 78; *Turrill v. Railroad Company*, Id., 491.

Under a new disguise, is not the question here raised exactly the same as that involved in *Burr v. Duryee*, decided by this court but a year ago? 1 Wallace, 531. If this is so, it would be indecorous to discuss it. No case in the law of patents was ever more ably discussed than that; the united sciences of jurisprudence and mechanics having been brought as sister lights, with memorable ability, to bear upon the matter in issue. The court will remember the very able arguments of all the gentlemen; that one especially, as found in the report of the case, which we now beg to refer to, of Mr. George Harding, of Philadelphia, who, for the sake of juridical science in its application to the useful arts of the country, was allowed almost to convert these precincts of the law into an institute of science. The case was not less ably expounded from the bench in giving judgment in the case. Overruling nothing, perhaps, the opinion there given did not the less dissipate a "bank of fog," which the learned justice who gave it remarked, "that the subtle ingenuity with which its principles were sometimes presented" had involved the law of patents, and in which my learned brother of the other side would now cover it again.

Mr. Justice GRIER delivered the opinion of the court.

The error alleged is the refusal of the court to give certain instructions, the substance of which, when extricated from the mass of verbiage with which it is encumbered, seems to be, "that the plaintiff had a right to claim any mode of combining" the various mechanical devices, in the improved machine, which would produce the same effect or result, as mere equivalents for those described in his patent. The court refused to give this instruction to the jury; but, on the contrary, instructed them in the language quoted in the reporter's statement. *Supra*, p. 126. The instruction there quoted is a correct exposition of the law, and if it produced a verdict in favor of defendant, the plaintiff had no right to complain.

The plaintiff's original patent limited his claim, very properly,

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to the particular devices and combination of parts which constituted his improved machine. But as this claim was not broad enough to cover the improvement described in defendant's patent, the plaintiff surrendered his, and had it reissued with a more *expanded claim*. It is for the infringement of this *reissued* patent that the action is brought.

We have had occasion to remark, in a late case, (*Burr v. Duryee*, 1 Wallace, 535; see, also, *McCormick v. Talcott*, 20 Howard, 405,) on this new art of expanding patents for machines into patents for "a mode of operation," a function, a principle, an effect or result, so that by an equivocal use of the term "equivalent," a patentee of an improved machine may suppress all further improvements. It is not necessary again to expose the fallacy of the arguments by which these attempts are sought to be supported, though we cannot hinder their repetition.

LET THE JUDGMENT BE AFFIRMED.

READ *v.* BOWMAN.

(2 Wallace, 591.)

1. A declaration that a certain improvement, containing in reality one principal and three distinct minor improvements, was patented on a day named, is supported by evidence that four patents—reissues—were subsequently granted on an original patent of the date named; such original having, in its specification, described all and no more than the improvements specified in the four reissues. The reissues relate back.
2. Where the purchaser of a claim for a patent agrees that, as soon as the patent is issued, he will give his notes, payable at a future date, the fact that no patent has issued until *after* the day when the last note, if given, would have been payable, is no defense to *assumpsit* for not having given the notes; the patent having finally issued in form.

READ & WHITAKER were inventors of four improvements in reaping and mowing machines, the principal one being what was called a "tubular finger-bar;" and in 1856 were in partnership, under the name of Lloyd, Whitaker & Co., with two persons named Lloyd & Bowman; these last-named persons using the improvements with them, though not in any way inventors. On 27th December, 1856, Read & Whitaker applied for a patent; their application giving authority to Mr. Hanna, of Washington, whom they appointed their solicitor, "to alter or modify the drawings, specifications, and claims thereunto attached, in such manner as circumstances might require, or to withdraw the application altogether should it be deemed advisable, and in that event to receive

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and receipt for such sums of money as should be returnable under the act of Congress in that case made and provided." Pending this application, and before any letters were granted, Read agreed to sell out his interest to *Whitaker* for \$4,500; of which \$1,500 was to be paid, and was paid in cash. The instrument of sale recited that, "Whereas Read & Whitaker have invented an improvement, for which they have applied for letters patent; and whereas, Whitaker has agreed to purchase of Read his interest in and to said invention, in consequence of letters patent, granted or to be granted; now, therefore, I, the said Read, in consideration, &c., hereby assign, &c., to Whitaker, the full and exclusive right to said invention, as set forth and described in the specifications which I, in company with Whitaker, have prepared, executed, and filed with the Commissioner of Patents at Washington, preparatory to obtaining letters patent therefor. To have and to hold," &c. Then, in a separate paragraph, the assignment proceeds, for the same consideration, (\$4,500,) and the further consideration of one dollar, to assign to Whitaker Read's right, title, and interest in and to three claims to inventions made by Read & Whitaker, for which the specifications had not been fully made, describing them.

The specifications above referred to contained a description of all the improvements in the case, which were plainly but parts of one invention.

Contemporaneously with this assignment, Whitaker, as one party, and "Bowman & Lloyd" signing as another, executed an engagement to Read for \$3,000, the balance of the consideration of the transfer from Whitaker to him. The contract, in opening, recites, that Read had assigned to *Whitaker* all his title in certain *inventions and improvements* (both plural) made by Read & Whitaker, in improvement of grain-reapers and grass-mowers, &c., (for full particulars reference being made to said assignment,) "for which the said *Whitaker* has agreed to pay the said Read as follows: \$1,500 on the 1st January, A. D. 1859, and \$1,500 on the 1st January, A. D. 1860, with interest." And the contract then thus concludes:

"Now, therefore, we, the said *J. Lloyd, F. H. Bowman, and J. T. Whitaker*, do hereby agree, for a valuable consideration to us paid by the said Read, (the receipt whereof we do hereby acknowledge,) as soon as the patent for the improvement in the grain-reaper and grass-mower aforesaid is obtained by the said Read & Whitaker, to execute unto the said Read our joint and several notes for the said amounts, payable as aforesaid, with interest as aforesaid."

Argument for the plaintiff in error.

The dates when the notes were to come due must be observed. After this time Read retired from business; the three other persons continuing it, and using all four improvements:

The "specifications" referred to in Read's assignment, as filed by him and Whitaker with the Commissioner of Patents, presented in reality *four* improvements. Mr. Hanna, their solicitor, withdrew three of the claims; and on the 11th of August, 1857, accepted a patent for *one* of them only, as specified in a specification amended by him; the patent embracing all the improvements in its specification, but the claim being restricted to the principal improvement, that of the "tubular finger-bar." On the 12th of February, 1859—this date, too, must be noted—"Bowman & Lloyd," who now ceased to use any of the improvements, notified to Read that, as more than a sufficient time had elapsed for procuring the patent for improvements, and as the same had not been procured, they (Bowman & Lloyd) considered themselves discharged, and the contract void, so far as *they* were concerned. About one year after this notice, that is to say, on the 7th February, 1860, Read did obtain *four* patents—*reissues* upon the patent of August 11, 1857, which reissued patents, it was admitted, did contain the said four improvements, being all the improvements in the matter.

Read accordingly brought assumpsit against Whitaker, Bowman & Lloyd, for breach of contract in not executing their two notes for \$1,500 each; the declaration alleging that, subsequently to making the agreement, "to wit, on the 11th day of August, 1857, the said improvement was duly patented;" nothing being said about any surrender or about the reissues; and the one patent of August 11, 1857, being alone offered in proof.

The question below was, whether this declaration was sustained by the evidence; and whether Lloyd & Bowman were discharged. The court held the declaration sufficient on the reissued patents being granted; that both Bowman & Lloyd were bound, just as Read was; that Bowman & Lloyd were chargeable with notice of Mr. Hanna's authority, and were bound by such changes and modifications as he made. Verdict was given for the amount of the notes with interest. Judgment having gone accordingly, the defendants brought the case here on error.

Goodwin, for the plaintiff in error: The contract about the notes shows plainly that Whitaker was the principal debtor. It is "the said Whitaker" who "has agreed to pay the said Read." Lloyd & Bowman do not contract to *pay* at all. Indeed there was no

Argument for the plaintiff in error.

equity to raise an obligation for them to pay. Read's assignment was to "Whitaker," and to him alone. He alone got a permanent and beneficial interest. What Lloyd & Bowman do is this: they —after that Whitaker has promised to *pay*—agree that they with him will give their notes. Is it not plain that they did this as his sureties? Where a contract is to pay the debt of another, without any new consideration to the party so contracting, the obligation is to be construed as one of suretyship, (*Rees v. Barrington*, 3 Leading Cases in Equity, by Hare & Wallace, 3d edit., 837;) and, of course, to be construed strictly. The surety is bound in the manner and under the circumstances pointed out in his obligation. He may stand to its very terms, and if a variation is made without his assent, he is discharged.

This obligation of the sureties was not absolute, but was contingent upon the condition precedent, that a patent for the specified improvements should first issue. If no patent ever issued, although Whitaker was still liable to Read for the sum agreed, Bowman & Lloyd could not be called upon for its payment.

Then the issue being a condition precedent, such condition must have been performed within a *reasonable time*; prior, at least, to the time when the debt for which they thus contingently bound themselves matured: obtaining a patent subsequent to such time was not sufficient. But all the obligation of Whitaker became due on or before the 1st day of January, 1860; the reissued patents all bear date subsequently. From the date of the contract, therefore, to its maturity, the condition precedent to Bowman & Lloyd's liability remained unperformed.

Moreover, by the terms of the contract it was necessary that a patent should issue for all the improvements specified. In their mechanical nature, one may have been greater than another. In their legal magnitude, all stand on one base. The patent of 11th August, 1857, the only patent offered in evidence, being for only *one* of the four, was not a performance of the condition.

Under the simple allegation of the issue of a patent on that day, it was not competent to prove the surrender of such patent, and the reissue of the four patents nearly three years afterwards. This evidence being excluded, there was nothing before the jury but the patent of August 11th, 1857, and the verdict should have been for the defendants.

The true construction of the last clause of the contract is, to regard it as containing solely the contract of Bowman & Lloyd, in the same manner as if the earlier part had been signed by Whitaker, with the clause omitted; and then the clause indorsed upon

Argument for the plaintiff in error.

the contract, or written beneath it, and signed by Bowman & Lloyd only. Any other view involves the absurdity of making Whitaker both absolutely and contingently liable for the same debt by the same instrument. The contract of the respective parties, though contained in the same writing, must in construction be so severed as to be consistent with itself; and any other construction than that for which we contend, either changes the *absolute* liability of Whitaker to pay, which is clearly fastened upon him by the previous part of the contract, into a *contingent* liability dependent upon a condition to be performed, or enlarges the obligation of Bowman & Lloyd, which is contained only in this final clause, from a *conditional* into an *absolute* liability, a construction which would make the instrument inconsistent and contradictory.

Bowman & Lloyd are not chargeable with notice of the authority of Mr. Hanna. The contract refers to the *specifications* as containing the *description* of the *inventions* for which a patent was to be issued, and is only notice of what such inventions were, and not of the power of attorney. Even if notice of the appointment of Hanna as the attorney, and of his authority, can be implied from the contract, it would be no evidence of the *assent* of Bowman & Lloyd to the exercise of such power to *withdraw or lessen the patent*. On the contrary, the notice of such power would no more be evidence of such assent, than the knowledge of the like authority existing in the inventors themselves under the patent law would imply such assent. The contract made with Bowman & Lloyd by the patentees would, in fact, restrict both the patentees themselves and their attorneys from the subsequent exercise of such power of withdrawal or modification, so far as Bowman & Lloyd were concerned, without the consent of Bowman & Lloyd, and would require the patent to be obtained for all the specified improvements, as set forth in the agreement, in order to hold Bowman & Lloyd under that contract.

To construe the power given to Mr. Hanna by the patentees as binding upon Bowman & Lloyd, and implying their assent to its exercise, would contradict the terms of the contract, for Bowman & Lloyd were not to be liable unless a patent were *first* issued, but Mr. Hanna was authorized to withdraw the entire claim and receive back the patent fee. You cannot imply Bowman & Lloyd's assent to the withdrawal of any part of the claim any more than of the whole, for all the evidence of such assent is what is furnished by the writings themselves, and give the same authority to withdraw all as any part.

Argument for the defendant in error.

Mr. Roberts, contra: There is no evidence that Lloyd and Bowman were sureties. Had the consideration moved wholly to Whitaker, it would not have proved that fact, for a promise is not necessarily that of a surety because the consideration moves to another. But it is evident that Lloyd and Bowman were interested in the purchase, for they received, had, and used the thing bought. The assignment was made to Whitaker, probably, because he was a joint inventor. Even if they were sureties, that makes no difference; for sureties are as much bound by the true intent of instruments as principals.

Had not the pleader in drawing the *nar.* alleged the issue of a patent, we should have insisted that there was no condition precedent to be performed by Read. The law is that if a promise is made to pay a sum of money at a fixed time, with a condition annexed which may never be performed, the promise is not dependent but absolute. In *Harlow v. Boswell*, 15 Illinois, 56, the promise was to pay in twelve months, *or so soon as the promisor should sell to the amount of the note out of a certain commodity*. Treat, C. J., said the note was payable absolutely at a day certain. In *McCarty v. Howell*, 24 Illinois, 341, the note read, "Four months after date, or so soon as I collect a certain note against A. Davis, I promise to pay," &c. Breese, J., after stating that the note was to be construed most strongly against the promisor, and that it was payable absolutely, put a quietus upon the defendant's argument by stating their respective positions thus: "By our construction the note would read, 'Four months after date I promise to pay,' &c., 'but if A. D. pays his note before that time I will pay then.'" By the other construction it would read, "I will pay this note at four months, but if A. D. does not pay his note to me I will never pay it." The *reductio ad absurdum* would be no less apparent in the present than in that case, if the position indicated were assumed. Mr. Read had parted with property valued at \$3,000 over what had been paid for it, and with all control over it; the purchasers had it in their power never to perform the condition, on the hypothesis assumed, by delaying the obtaining of the patent until after the time the notes were to be given, and thus to defeat a right of action and still keep the property. And this is the true reason why such a promise is absolute. It is because the promisor has it in his power to defeat the condition. Who can say that the plaintiffs in error did not, in this very case, delay the grant of the reissues, for a month and seven days, upon the idea of saving to themselves \$3,000?

With regard to Mr. Hanna: By the agreement between Read &

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Whitaker, it was understood between them that the specifications might be altered, modified, or changed by this person. When, therefore, the letters patent were issued, upon the specifications, whether as they originally stood, or as modified, Whitaker was bound, by the letter and spirit of the contract, to execute the notes. This determined the obligation of Bowman & Lloyd. It must be considered that the parties entered into this contract with all the rights with which the patent law clothes inventors, one of which is, that a defective specification can be amended. Hanna modified the specifications, by striking out all but one claim. The parties are presumed in law to have been informed by their attorney that this had been or would be done; and hence the distinction in the assignment, both in respect to the *one* invention, as distinguished from the other three, and in respect to the consideration of the assignment, by making a class of one claim, and another distinct class of the other three, so that, although the whole were assigned to Whitaker, they well understood, at that time, that the patent then issued or to be issued, covered but the one claim. Read undertook for nothing, except that the inventions were patentable, to be shown by the issue of a patent. He had parted with all his interest in the invention, and had no right to interfere with Whitaker's proceedings in obtaining the patent in any form he wished. If he had interfered to prevent its issue upon the one claim, he would have thereby furnished a perfect defense to this action.

The second patent legalized the rights of the patentee from the date of the first patent. The reissue was still a patent for the original invention, and if these effects can be given to it, it was properly declared on as it was.

Mr. Justice CLIFFORD delivered the opinion of the court.

This is a writ of error to the Circuit Court of the United States for the Northern District of Illinois. The principal question in the case arises upon the exceptions of the defendants to the instructions given by the court to the jury. Other exceptions were taken by the defendants to the rulings of the court, and to the refusal of the court to instruct the jury as requested; but the whole substance of the controversy between the parties, and of the errors assigned in the record, is involved in the exceptions to the instructions of the court. Defendant in error and the first-named plaintiff were inventors of a certain improvement in reaping and mowing machines, and were joint owners of the improvement. They applied to the Patent Office for letters patent, and employed a

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patent solicitor to prosecute their claim before the Commissioner. Application was filed on the eighteenth day of May, 1857, and it is conceded that the specifications accompanying the same contained a description of the entire improvement. Pending the application, and before the letters patent were granted, Whitaker, the principal defendant in the court below, agreed with his associate inventor to purchase of him, for the sum of four thousand five hundred dollars, all the right, title, and interest which the latter had or might have in and to the invention, in consequence of the letters patent granted or to be granted therefor; and, in consideration of that sum, the plaintiff in the court below, who was the other inventor, assigned and set over to the party first named the full and exclusive right to all of the invention, as set forth and described in the specifications; and the contract was that the assignee should have and hold the invention to him and his assigns, as fully as the same would have been enjoyed by the assignor, if the assignment and sale had not been made. Introductory part of the instrument described the invention as an improvement in reaping and mowing machines, for which the inventors had applied for letters patent. Assignor also, by the same instrument, "in consideration aforesaid, and also of one dollar" to him paid, assigned and set over to the same assignee all right, title, and interest in and to three certain claims to inventions, described as made by the same inventors, and for which the specifications had not been fully prepared. Suit was brought in this case by the assignor in that instrument, to recover the sum of three thousand dollars as the unpaid balance of the consideration for the title and interest of the invention as conveyed.

Declaration was an assumpsit, and was founded upon a contemporaneous written agreement, signed by the assignee in that assignment, and the other two defendants. Agreement declared on refers to the instrument of assignment, describes the subject-matter assigned as improvements "to grain-reapers and grass-mowers, belt-tightener," &c., specifies the entire consideration, states that the balance unpaid is three thousand dollars, and that the same is to be paid in two annual installments, with interest at ten per cent. per annum, and concludes with what is the material clause in the controversy. Substance of the clause is that the defendants agreed to execute to the assignor of the invention their joint and several notes "for said amounts, payable as aforesaid, with interest, as aforesaid," as soon as the patent for the improvement in the grain-reaper and grass-mower aforesaid is obtained by the said inventors. Material allegations of the declaration are,

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that the letters patent described in the agreement were, on the eleventh day of August, 1857, duly obtained, and that the defendants, after due notice thereof, neglected and refused to give to the plaintiff their joint and several notes as they had agreed to do. Plea was non-assumpsit, and the verdict and judgment were for the plaintiff.

I. Principal defense is that by the true construction of the agreement, no right of action against the last two defendants was to accrue to the plaintiff, unless letters patent for all the improvements specified in the assignment were obtained within a reasonable time, and that inasmuch as the patent of the eleventh of August, 1857, was for one *only* of the four specified improvements, the plaintiff, as against those defendants, is not entitled to recover. Reference must be made to the circumstances under which the contract was made, as affording the means of applying the language employed in the instrument to the subject-matter of the agreement. Parties agreed that there were four improvements, but they all related to grain-reapers and grass-mowers, as the machines are called in the written contract. Specifications of the patent of the eleventh of August, 1857, embraced all of the improvements described in the assignment, but the claim of the patent limited the invention to the tubular finger-bar, therein described, which is by far the most important feature of the entire improvement, and really constitutes the principal merit of the invention. Description of the improvement in the assignment is that it is an improvement in reaping and mowing machines, and there can be no doubt that it was regarded by the parties as constituting the principal matter of the assignment and transfer. But the other improvements are embraced in the assignment, and cannot be separated from the consideration specified in the instrument. Two of the claims are described as the subjects of one application, and the other as an invention for a belt "tightener," operated by a right and left hand screw. They were four in all, and in point of fact were all described in the original specification, and are the same as those described in the reissued patents set forth in the record.

First one, as before stated, consists of an improvement in the construction of the finger-bar in reaping and mowing machines, substituting a rolled tubular finger-bar in the place of the solid bar previously used.

Second one consists of an improvement in the arrangement and combination of the raker's seat with a supporting wheel, and the frame and finger-bar of the machine.

Third one consists of an improvement in the mode of mounting

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the driving wheel, and of driving the pulley that communicates motion to the belt and reel pulley.

Fourth one consists of an improvement for tightening the belt which draws the reel for the purpose of gathering the grain into the sickle.

Obviously the improvements are but parts of the same invention, and the evidence shows that the parties to the assignment had invented them all before the date of that instrument. Precise date of the invention does not appear; but it does appear that all of the parties to the written agreement were partners in 1856, and that the partnership used the improvement in the manufacture of machines. When the plaintiff assigned his interest in the invention to the first-named defendant he retired from the firm, and the other partners continued the business, using all four of the improvements. Express reference is made, both in the assignment and in the agreement, to the pendency of the application for a patent, in respect to the principal improvement, and in the latter, both to the pending specifications and to those which were "not fully made." Such reference to the specifications and pending proceedings renders it allowable to examine those documents in connection with the assignment and agreement, as means of ascertaining the true intent and meaning of the parties.

Pending application for the patent was dated the 27th day of December, 1856, and was signed by both of the inventors. Authority was therein conferred upon their solicitor to alter or modify the drawings, specifications, and claims thereunto attached, in such manner as circumstances might require, or to withdraw the application altogether should it be deemed advisable, and in that event to receive and receipt for such sums of money as should be returnable under the act of Congress in that case made and provided.

Pursuant to the authority conferred by both the inventors, he amended the specifications and received the patent described. Effect of the assignment was not only to transfer the whole title of the several improvements to the assignee, but also to confer upon him the entire control of the pending application for letters patent. He could cancel the authority of the solicitor, or he could suffer it to remain without restriction or limitation. Plaintiff reserved no control in the matter, and it does not appear that he ever attempted to interfere in the premises. Purchase of the assignee was an absolute one, and he was bound to pay the consideration at all events. Plainly the other defendants were not parties to the assignment, nor were they parties to the promise of the assignee to

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pay the consideration, as therein specified and repeated in the introductory part of the written agreement.

Their promise is contained in the last clause of the instrument, and it is conditional; but it is a mistake to suppose that it is not a joint one with the assignee. Neither the assignee nor the other two defendants promised to give their notes for the consideration, excepting on the happening of the condition therein specified. Legal effect of the promise by all three was, that they would give their joint and several notes for the two unpaid installments, "payable as aforesaid, with interest aforesaid," as soon as the patent for the improvement in the grain-reaper and grass-mower aforesaid was obtained by the inventor. Obligation to perform was made dependent upon the future and undetermined action of the patent officer. Applicants for patents may, by law and the usages of the bureau, amend their specifications, and do everything authorized to be done by the patent solicitor in this case. Assignee knew what authority he and his associate inventor had conferred upon the solicitor, and it must be understood that the other defendants also knew what was the law upon the subject and the general usage of the Patent Office. Instructions of the court, therefore, were right, that when the letters patent were issued, the assignee was bound, by the letter and spirit of his contract, to execute his notes. Defendants are right in supposing that a surety may stand upon the very terms of his contract; that he will be discharged if any alteration is made in his agreement, without his knowledge or consent, which prejudices him, or which amounts to the substitution of a new agreement for the one he executed. *Bonar v. McDonald*, 1 English Law and Equity, 8; *McWilliams v. Mason*, 5 Duer, 276; *Maher v. Hall*, 5 Barnwall & Cresswell, 269; *Bouler v. Cox*, 4 Beavan, 380; *Islyn v. Hartell*, 8 Taunton, 208.

But sureties are as much bound by the true intent and meaning of their contracts which they voluntarily subscribe as principals. They are bound in the manner, to the extent, and under the circumstances as they existed when the contract was executed. *Roth v. Miller*, 15 Sergeant & Rawle, 100. Strong doubts are entertained whether any one of the defendants can be regarded as a surety; but it is unnecessary to decide that question at the present time. Terms of the contract, or that part of it under consideration, were based on the undetermined action of the Patent Office, and in consideration of that fact it must be assumed that the parties not only knew that the specifications might be amended or withdrawn, but that they contracted in view of the probability that

Syllabus.

such changes might be made. *Barclay v. Lucas*, 1 Term, 291, n.; *Miller v. Stewart*, 9 Wheaton, 703; 4 Stat. at Large, 122.

Patentees, also, are clothed with the power, whenever the patent granted shall be inoperative or invalid by reason of a defective or insufficient description or specification, if the error arose from inadvertency, accident, or mistake, to surrender the same; and thereupon the Commissioner of Patents, upon the payment of the duty, is authorized to cause a new patent to issue. Reissue must be for the same invention, and in judgment of law it is only a continuation of the original patent; and, consequently, the rights of the patentee, except as to prior infringements, are to be ascertained by the law under which the original application was made. *Shaw v. Cooper*, 7 Peters, 315; *Grant v. Raymond*, 6 Peters, 244; *Stanley v. Whipple*, 2 McLean, 35.

Original patent in this case was surrendered, and on the 7th of February, 1860, four distinct reissues were granted. Prior patent, as already explained, embraced all those improvements in its specifications, but the claim was restricted to the principal improvement. Object of the surrender was to correct that part of the specification known as the claim, and it is admitted by the defendants that the reissues cover all the improvements specified in the assignment, and no more than what was embraced in the original specifications. Under the circumstances, we are of the opinion that the instruction of the court that the declaration is sufficient was correct. Considering the state of the record, we have not thought it necessary to reproduce the instructions of the court, but have preferred to state our views of the law applicable to the case, and only wish to add that the instructions of the court were in all substantial respects correct. The decree of the Circuit Court, therefore, is

AFFIRMED WITH COSTS.

THE SUFFOLK COMPANY v. HAYDEN.

(3 Wallace, 315.)

1. Where a party having made application for a patent for certain improvements, afterwards, *with his claim still on file*, makes application for another but distinct improvement in the same branch of art, in which second application he describes the former improvement, but does not in such second application claim it as original, the description in such second application and non-claim of it there, is not a dedication of the first invention to the public.
2. In cases where there is no established patent or license fee, general evidence may be resorted to in order to get at the measure of damages; and evidence of the utility

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- and advantage of the invention over the old modes or devices that had been used for working out similar results is competent and appropriate.
3. The jury, in ascertaining the damages, upon this sort of evidence, is not to estimate them for the whole term of the patent, but only for the period of the infringement. And a recovery does not vest the infringer with the right to continue the use.
 4. Where the Patent Office grants a patent for one invention, and afterwards, upon a claim filed previously to that on which such patent has been granted, issues another, the second patent, not the first, is void.

IN December, 1854, Hayden, being the inventor of improvements in cotton cleaners, made application to the Commissioner for a patent therefor.

The improvements consisted in certain described changes made by Hayden in the *interior arrangements* of an elongated trunk previously in use for cleaning cotton.

While this application was still pending, Hayden made another distinct improvement, not in the interior arrangements of the elongated trunk, but in the *form* of the trunk. This improvement consisted in increasing, towards the rear end of the trunk, that part of its area above the screen, (which divided it horizontally into two distinct parts,) so that as the air moved through the trunk towards its rear, the space for its passage being enlarged, the air would gradually move more slowly.

Hayden desired, apparently, to claim this new improvement in the form of the trunk, both separately and in combination with his other improvements in the interior arrangements of the trunk, as to which his application was then pending. Accordingly, in November, 1855, he filed his application for a patent, and on the 17th day of March, 1857, letters were issued to him, in the specification whereof he claims the improvement in the *form of the trunk*, both separately, and in combination with his improvements in the interior arrangements of the trunk; but he made no claim in this specification to his improvements in the interior arrangements of the trunk.

It did not appear that Hayden was guilty of any laches, or was in any default in reference to the delay of the Commissioner to act on his first application for a patent for improvements in the interior arrangements of the trunk made in December, 1854. For some cause, however, the Commissioner had not acted on that application down till June, 1857; and in that month Hayden made another application for a patent, for what the judge at the trial, at the request of the defendants, ruled to be the same improvements, previously applied for in December, 1854; and upon this second application a patent was granted, bearing date December 1, 1857.

[It may be here mentioned incidentally, since the matter was made a point by counsel and is referred to by the court—though

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the patent of December 1, 1857, was the only one in suit—that the Commissioner finally acted on the original application of December, 1854, and on the 11th of September, 1860, granted on it a patent—and as was *alleged*, though not proved, for the *same improvement* covered by the patent of December 1, 1857.]

Hayden having sued the Suffolk Manufacturing Company, in the Massachusetts district, for the infringement of this last-mentioned patent, the defendant's counsel at the trial requested the judge to rule that the patent was void, because the improvements in the interior arrangements of the trunk, which were described and claimed in it, being also described and *not* claimed in the patent of the 17th of March, were *by the legal operation of the last-mentioned patent surrendered to the public use*.

The judge refused so to rule, and on error this refusal raised here the first question; the counsel for the Suffolk Company taking the same position here as below.

A second question was on the law as delivered to the jury on the matter of damages.

It appeared that no sales had been made of the patent right by the plaintiff, or of licenses for the use of it, so as to establish a patent or license-fee as a criterion by which to ascertain the measure of damages. The court below accordingly permitted evidence, after objection, as to the uses and advantages of this improvement over the previous methods of cleaning cotton. And an expert testified that the results were—a more thorough cleaning of the cotton, the saving of all the good fibres, less damage to the staple, the freeing of the room from dust, and the machinery from dust, dirt, and sand; the keeping of the machinery in better order at less cost, and dispensing with one grinder of the cards in consequence of the diminution of dirt and sand, expelling fine dust and dirt not before got out, less breakage of the yarns, &c.

There was, also, evidence of the amount of cotton that had been cleaned at the defendants' mills by the plaintiff's improvement within the period for which the damages were claimed.

The court below, in its charge to the jury, stated the rule as prescribed by the statute, which is the actual damages that the plaintiff has sustained from the infringement; and, while speaking of the patent of December, 1857, among other things, observed:

"Then you will look at the value of the thing used, and ascertain that value by all the evidence as to its character, operation, and effect. You will take into view the value of that which the defendants have used belonging to the plaintiff, to aid you in forming a judgment of the actual damage the plaintiff has sustained."

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The jury having found for the plaintiff and damages \$1,774, the charge as above given was assigned by the defendant for error; and made a second question in this court; the counsel for the defendants arguing that the court in the instructions quoted gave a latitude to the jury in the estimate of damages beyond that of the use or value of the improvements comprised in the patent in question; that they might take into view the improvements on the patent of the 17th March, 1857; and arguing also that the value of the improvement was not a proper matter for the jury to consider when making their estimate of damages.

Messrs. Caleb Cushing and Causton Browne, for the Suffolk Company, plaintiff in error.

Mr. Justice NELSON delivered the opinion of the court. *

The first point of the plaintiff in error is, that the description, in the patent of March, of the improvement patented the December following, and on which the present suit is brought, and omission to claim it on such earlier patent, operated as an abandonment or dedication of it to the public, and that for this reason the subsequent patent of 1st December was void. But the answer to this ground of defense is, that it appeared that Hayden, the patentee, had pending before the Commissioner of Patents an application for this same improvement at the time he described it in the specification of the 17th March, which was, doubtless, the reason for not claiming it in this patent. The description in no sense affected this application thus pending before the Commissioner; and, while it remained before him, repelled any inference of abandonment or dedication from the omission to again claim it.

This original application before the Commissioner for a patent, among other things, for an improvement in the screen of the long trunk, not having been acted upon by that officer, a new application was made by Hayden, separately, for this improvement, and which resulted in the patent of 1st December, 1857, on which the present suit is brought.

We do not perceive any objection to this proceeding. It simplified the application, and disengaged it from its connection with other improvements claimed; and, doubtless, hastened the granting of the patent. The office, however, subsequently acted upon this original application, and, on the 11th September, 1860, granted a patent to the plaintiff, and, as is alleged, for the same improvement embraced in the patent of the 1st December, 1857, the one in ques-

* The Chief Justice and Davis, J., not having sat, being out of town.

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tion. And it is insisted that, for this reason, this prior patent for the same improvement is void. This is, obviously, a misapprehension. The last, not the first, is void.

We may add, on looking at the patent of 11th September, 1860, it does not appear that it was granted for the same improvement. It is a patent for a combination of this improvement with other devices.

As to the question of damages. It is supposed by the counsel for the defendants that the court, in the instructions quoted on preceding pages, gave a latitude to the jury in the estimate of damages beyond that of the use or value of the improvements embraced in the patent in question; that they might take into consideration the improvements on the patent of the 17th March, 1857, for widening one end of the trunk. But it is quite apparent that the court was speaking all the time with reference to the improvement in the patent in suit, and the only one in contestation. It is, also, urged that the value of the improvement was not a proper subject for the consideration of the jury in estimating the damages. This may be admitted. But looking at the term *value*, in the connection in which it was used, it is quite clear that it had reference only to the utility and advantages, or value of the use of the improvement over the old mode of cleaning cotton; not the value of the patent itself.

This question of damages, under the rule given in the statute, is always attended with difficulty and embarrassment both to the court and jury. There being no established patent or license fee in the case, in order to get at a fair measure of damages, or even an approximation to it, general evidence must necessarily be resorted to. And what evidence could be more appropriate and pertinent than that of the utility and advantage of the invention over the old modes or devices that had been used for working out similar results? With a knowledge of these benefits to the persons who have used the invention, and the extent of the use by the infringer, a jury will be in possession of material and controlling facts that may enable them, in the exercise of a sound judgment, to ascertain the damages, or, in other words, the loss to the patentee or owner, by the piracy instead of the purchase of the use of the invention.

It is proper to say, as was said in the court below, that the jury, in ascertaining the damages upon this evidence, is not to estimate them for the whole term of the patent, but only for the period of the infringement. A recovery does not vest the infringer with the right to continue the use, as the consequence of it may be an injunction restraining the defendant from the further use of it.

JUDGMENT AFFIRMED.

Statement of the case.

COMMISSIONER OF PATENTS v. WHITELEY.

(4 Wallace, 522.)

1. When an applicant for a reissue of a patent has done all in his power to make his application effectual—has filed his application with the Acting Commissioner and paid the requisite amount of fees—the application is to be considered as properly before the Commissioner.
2. Where a statute directed the Commissioner of Patents to grant a reissue of patents in certain cases, to "assignees," it is the duty of the Commissioner to decide whether the applicant is an assignee with such an interest as entitled him to a reissue within the meaning of the statutory provision on the subject; and if he has thoroughly examined and decided that the applicant is not so, a *mandamus* will not lie commanding him to refer the application to "the proper examiner, or otherwise examine or cause the same to be examined according to law." The preliminary question was within the scope of his authority. If the *mandamus* had ordered the Commissioner to allow an appeal, the order under which it issued would have been held correct.
3. *Mandamus* cannot be made to perform the functions of a writ of error.
4. *Sembler* that an applicant for a reissue of a patent under the thirteenth section of the Patent Act of 1836, which allows a reissue in certain cases to a patentee, "and in case of his death or any *assignment* by him made of the *original patent*," vests a similar right "in his executors, administrators, or *assignees*," must be an assignee of the whole interest in the patent; and not the assignee of a sectional interest only. At least where the Commissioner of Patents had thus decided, this court, on the questions being raised in connection with other questions, whose decision rendered a decision on *it* unnecessary, say that "as at present advised they were not prepared to say that the decision of the Commissioner was not correct."

ERROR to the Supreme Court of the District of Columbia.

Whiteley, the defendant in error, was the assignee of a sectional interest in a patent granted to Haines, on the 4th of September, 1855, for an improvement in mowing machines. He held, by virtue of several assignments, all the territory embraced in the patent, except the State of Ohio and the northern half of the State of Illinois; and in all the territory, except as just mentioned, was assignee of all the rights of the patentee.

In 1863, he applied to the Commissioner of Patents for a reissue of the patent, according to the thirteenth section of the Patent Act of 1836; a section which enacts that—

"Whenever any patent, &c., shall be inoperative or invalid, by reason of a defective or insufficient description or specification, &c., if the error has or shall have arisen by inadvertency, accident, or mistake, &c., it shall be lawful for the Commissioner, upon the surrender to him of such patent, &c., to cause a new patent to be issued to the said inventor for the same invention, for the residue of the period then unexpired for which the original patent was

Statement of the case.

granted, in accordance with the patentee's corrected description and specification. And in case of his death, or *any assignment* by him made of the original patent, a similar right shall vest in his executors, administrators, or *assignees*."

The assignees for the State of Ohio, and of the northern half of Illinois, did not join in the application.

The Commissioner of Patents, after a laborious investigation of the law and comparison of various sections of the patent acts, decided that the applicant, not being the assignee of the whole interest in the patent, was not entitled to the reissue asked for.

Whiteley took no appeal from the Commissioner's decision to the "board of examiners," but setting forth that his application for reissue was filed with the acting Commissioner, and the refusal, petitioned the Supreme Court of the District of Columbia for a *mandamus* to send the application *to an examiner to be acted upon by him as though made by the patentee*."

The Commissioner, in reply—premising that for the reason that the proposed applicant was not such an assignee as the law contemplates, and that the application, therefore, was not filed, or entered upon the books of the office, and never had been, and that the fees required on such application, which had been paid by the relator to the chief clerk of the office, on the presentation of said application, had not been placed to the credit of the patent fund, but remain in the hands of the chief clerk, personally, and subject to the order of the relator—replied, among other reasons, against the *mandamus*:

1. That the object of it was to carry by appeal a preliminary question solely cognizable by him, to the Supreme Court of the District, and that such a *mandamus* would be nugatory.

2. That he had decided rightly in rejecting the application, the relator not coming within the meaning of the term "assignee," as contemplated in the thirteenth section of the act of 1836. And in support of this view he submitted as part of his answer a full law argument, which now came up in the record.

The Supreme Court of the District granted the *mandamus*, "commanding the Commissioner of Patents *to refer said application to the proper examiner, or otherwise examine or cause the same to be examined according to law*." The case was now here on writ of error, brought by the Commissioner of Patents, to remove the proceeding to this court. Two principal questions were raised:

1. Supposing the decision of the Commissioner to have been erroneous, and that the assignee of a sectional interest in a patent

Argument for the plaintiff in error.

was entitled to a reissue, did a *mandamus* such as that above mentioned lie to correct the decision?

2. Did the Commissioner, in deciding as he did, that the applicant as owner of but a sectional interest was not entitled to a reissue, decide correctly?

In order to judge of the first question it is necessary to state—

1. That the Patent Act of 1836, by its seventh section, provides that on the filing of any application for a patent, "the *Commissioner* shall make or cause to be made an examination of the alleged new invention or discovery," and if on such examination it does not appear that the same had been invented or discovered by any other person, &c., he shall issue the patent. But if, on the contrary, he shall decide that the applicant was not the original and first inventor, &c., and the applicant shall insist on his claim, "such applicant may *on appeal have the decision of a board of examiners* to be composed of three disinterested persons who shall be appointed by the Secretary of State for that purpose," which board shall have power "to reverse the decision of the *Commissioner*, either in whole or in part."

2. That by an act of 1837, in addition to the former act, it is provided that in cases of application to the Commissioner for reissue, the applicant, if dissatisfied with the decision of that officer, "shall have the same remedy and be entitled to the same privileges and proceedings as are provided by law in the case of *original applications*."

Mr. Foote, for the plaintiff in error, contended.

On the first point. That if the decision was erroneous it could not be corrected in the manner in which the relator had proceeded. The Commissioner had already done just that thing which the writ commanded him to do. He had examined the matter very fully, and the proof of this was in the document found in the record as the chief reply to the application for the *mandamus* granted. The remedy was appeal.

On the second point. The decision of the Commissioner was believed by him to be correct; but that officer had no personal interest in the questions. All that he wished was that it should be settled by this court. Similar questions frequently arose in the Patent Office, and it was important to the public interest that the statute should receive an authoritative construction.

He conceded that an extension of the act to assignees of sectional interests would be very convenient to them. That the necessity of a reissue might be as great to them as to the owner of the whole

Argument for the defendant in error.

interest. Indeed that their rights might be impaired and even lost for want of such a power.

But there were serious objections to such a construction of the statute.

1st. It might lead to as many different patents for the same invention as the patentee should grant sectional interests in it.

2d. Upon a reissue the original patent must be surrendered.

In *Moffatt v. Garr*, 1 Black, 273, this court held that a surrender of the patent to the Commissioner in judgment of law extinguishes the patent. It is legal cancellation of it; and hence can no more be a foundation for a right after the surrender than could an act of Congress which had been repealed. If the patent be canceled by one assignee, how could a suit be maintained upon it by another who had not joined in the reissue? Or if the sectional assignee did not happen to possess the patent, how could he surrender it to be canceled?

3d. The omission in the thirteenth section of the act to mention the grantees of sectional interests, as would be seen on reference to it that the act does in other sections, in connection with the requirement of a surrender of the patent, would seem to imply that it was not the intention of the act to extend its provisions beyond the patentee and the assignee of the whole interest.

Messrs. Coombs and Fisher, contra :

So far as it was possible, Whiteley complied with all the forms and requirements of the law. The case, therefore, presents general questions of right applicable to many cases.

I. Has the Supreme Court of the District of Columbia jurisdiction and power to grant and enforce a "writ of *mandamus*" commanding the Commissioner of Patents to do an act enjoined by law?

The writ is a remedial writ, issuing out of the King's Bench, or other highest court of original jurisdiction; it commands the party to whom it is directed to do his duty, and summarily enforces its command by attachment; and it is the appropriate remedy where the law has prescribed no specific remedy, and where justice and good government require one. It is based upon the principle, that there should be a remedy to enforce every right. Without such writ, of such general application, and of such power *in terrorem*, the frequent failure of justice would be intolerable. Nowhere in the country is there so great need of the writ of *mandamus* as in the District of Columbia, where all the great departments of the General Government have their offices, and where the rights of the people are so liable to infringement.

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In *Griffith v. Cochrane*, 5 Binney, 103-105, a rule was granted upon Cochrane, secretary of the land office, "commanding him to prepare and deliver patents to Griffith" for certain tracts of land. The court said :

"Where a ministerial act is to be done, and there is no other specific remedy, a *mandamus* will be granted to do the act which is required ; but where the complaint is against a person who acts in a judicial or deliberative capacity, he may be ordered by *mandamus* to proceed to do his duty, by deciding according to the best of his judgment, but the court will not direct him in what manner to decide. This was the principle adopted by the Supreme Court of the United States in the case of *United States v. Lawrence*, 3 Dallas, 42, and it has been frequently recognized by this court. If the secretary had in this case refused to make any calculation, or take any step whereby the business of the applicant might be dispatched, it would certainly have been our duty to compel him by *mandamus*."

In *Kendall v. United States*, 12 Peters, 524, in this court—the leading authority upon the question—the court said :

"Congress has entire control over the District for every purpose of government ; and it is reasonable to suppose that, in organizing a judicial department here, all judicial power necessary for the purposes of government would be vested in the courts of justice. The Circuit Court here is the highest court of original jurisdiction ; and if the power to issue a *mandamus* in a case like the present exists anywhere, it is vested in that court."

In *Decatur v. Paulding*, 14 Peters, 515, Taney, C. J., in delivering the opinion of the court, said :

"In the case of *Kendall v. United States*, it was decided in this court that the Circuit Court for Washington county, in the District of Columbia, has the power to issue a *mandamus* to an officer of the Federal Government, commanding him to do a ministerial act."

The act of Congress of 3d March, 1863, (12 Stat. at Large, 762,) which established the Supreme Court of the District of Columbia, in section third, says :

"The Supreme Court organized by this act shall possess the same powers and exercise the same jurisdiction as is now possessed and exercised by the Circuit Court of the District of Columbia," &c.

II. Is the Commissioner of Patents commanded by law to ex-

Argument for the defendant in error.

amine, or cause to be examined, a proper and lawful application for a reissue, and does the writ of *mandamus* lie to enforce that command?

The relator holds that when an application for a reissue is made in due form of law, it is the duty of the Commissioner to examine it, and take such action upon the case as will enable the applicant to appeal from his decision if it be unfavorable. To this the Commissioner objects that the relator is not entitled to apply for a reissue, because he does not own the entire patent; that the legal question involved is *preliminary*, and determinable by him alone, without appeal; and refuses to put the case upon the files of the Patent Office in such form that his refusal to grant the reissue would give the applicant an appeal to a justice of the Supreme Court of the District of Columbia. And the object in praying for the writ was that the Commissioner might be compelled to "examine" this case. Before the examination can be made, the case must be duly *filed*, and then, if the Commissioner refuses the patent, for any reason, we are entitled to an appeal; but as long as the Commissioner keeps us completely out of the Patent Office, we are subject to his will, which deprives us of the right of appeal.

The thirteenth section of the act of 1836, the eighth section of the act of 1837, which is supplemental to it, and the seventh section of the act of 1836, are co-active sections of the law, and command the Commissioner to make, &c., an examination.

This being the case, the writ of *mandamus* lies to enforce that command.

Formerly the received idea was, that a *mandamus* would lie only to command the performance of a ministerial duty; but modern cases have gone much further, and it is now the practice to grant the writ to command the performance by any inferior jurisdiction or officer, of any public duty, for which there is no specific remedy. The duty must be a public one, though the value to the public is not scrupulously weighed.

Adjudged cases (*Rex v. Bp. of Litchfield*, 7 Modern, 218; *Rex v. J.J. of Kent*, 14 East, 220; *Rex v. J.J. of North Riding*, 2 Barnwall and Cresswell, 291; and *Griffith v. Cochrane*, 5 Binney, 103) cover the present one, and demonstrate the power of the court below to command and compel the Commissioner of Patents "to hear the application;" "to exercise his discretion;" "to determine the one way or the other;" "to put himself in motion to do the thing;" "to proceed to do his duty," by examining, or causing to be examined, our application for a reissue, according to law.

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III. Has the grantee of an exclusive territorial interest in a patent a legal right to apply for a reissue of that patent?

In *Shaw v. Cooper*, 7 Peters, 292, the court say, "That the holder of a defective patent may surrender it to the Department of State, and obtain a new one, which shall have relation to the emanation of the first, was decided by this court at the last term, in the case of *Grant and Others v. Raymond*, 6 Peters, 220."

The word "holder" here used, it must be observed, is a general term, and cannot be so restricted as to apply only to one who holds the entire interest in a patent; but is equally applicable to those who hold any exclusively territorial interest.

Moreover, the thirteenth section of the act of 1836, which first established the reissue, as now granted, grants unto *any assignee* the same right to a reissue that it grants to the patentee. Had it been the intention of Congress to restrict the remedy of reissue to the assignee of the *whole* interest, it would have been easy to use words of limitation, or to have used the restrictive and definite article "the" instead of the distributive pronoun "any," before the word "assignment."

[The learned counsel followed, and replied to the argument of the Commissioner, as set forth in the opinion annexed to his answer, and made part of the argument; contending, also, that Whiteley was not a mere grantee of an exclusive territorial right.]

Mr. Justice SWAYNE delivered the opinion of the court.

This case was brought here by a writ of error to the Supreme Court of the District of Columbia.

On the 4th of September, 1855, a patent was issued to Jonathan Haines, for an improvement in mowing machines.

On the 22d of November, 1856, Haines sold and assigned to Ball, Aultman & Co., an exclusive right to the invention and patent, within the limits of the State of Ohio.

On the 13th of April, 1858, upon the surrender of the original patent by Haines, and upon his application, without the assent of Ball, Aultman & Co., a reissue of the patent was granted to him.

On the 15th of January, 1860, Jonathan Haines sold and assigned to his brother, Ansel Haines, one undivided third part of his interest in the patent.

On the 25th of January, 1860, Jonathan and Ansel Haines sold and granted to Isaac and Wm. C. Hawley the exclusive right to the invention and patent in certain counties in the State of Illinois.

On the 10th of April, 1863, Ansel Haines reassigned to Jonathan Haines all his interest in the patent.

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On the 17th of April, 1863, Jonathan Haines sold and assigned all his interest in the patent to Andrew Whiteley, the defendant in error. Haines, at the same time, delivered the patent to Whiteley, in order that he might surrender it and procure another reissue.

Ball, Aultman & Co. were applied to; but declined to concur. It does not appear that the Hawleys were advised upon the subject.

On the 25th of January, 1863, Whiteley filed his application for a reissue in the Patent Office, in conformity with the provisions of the thirteenth section of the act of 1836.

The Commissioner of Patents declined to entertain the application, upon the ground that the applicant was only the grantee of an exclusive sectional interest, and not of the entire patent. He also declined to allow an appeal to be taken from this decision. An application was thereupon made to the Supreme Court of the District of Columbia for a writ of *mandamus*. That court awarded a peremptory writ, commanding the Commissioner "to refer said application to the proper examiner, or otherwise examine or cause the same to be examined according to law." This writ of error is prosecuted to reverse that order. Did the court err in making it?

The thirteenth section of the act of 1836 declares that, under the circumstances therein stated, "it shall be lawful for the Commissioner, upon the surrender to him of such patent," . . . "to cause a new patent to be issued to the said inventor, for the same invention, for the residue of the period then unexpired, for which the original patent was granted, in accordance with the patentee's corrected description and specifications; and in case of his death or any assignment by him made of the original patent, a similar right shall vest in his executors, administrators, or assigns."

The seventh section of this act provides that, on the filing of any application for a patent and the payment of the duty required, "the Commissioner shall make, or cause to be made, an examination of the alleged new invention or discovery," &c.

The eighth section of the act of 1837 provides, in regard to applications for the reissue of patents, and the decisions of the commissioner, that "in all such cases the applicant, if dissatisfied with such decision, shall have the same remedies, and be entitled to the benefit of the same privileges and proceedings as are provided by law in case of original applications for patents."

This renders it necessary to recur to the act of 1836, and to consider carefully its provisions touching the applications to which it relates.

Both acts should be liberally construed to meet the wise and

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beneficent object of the legislature. Patentees are a meritorious class, and all the aid and protection which the law allows, this court will cheerfully give them.

If the Commissioner should hold that a party applying originally for a patent "was not the original and first inventor," and should decide against him upon that ground, the applicant could undoubtedly take an appeal from his decision. The Commissioner having reached this conclusion, would be under no obligation to go further and examine any other question arising in the case, and it would not be necessary to the right of appeal that he should do so.

Here an assignee applied for the *reissue* of a patent. It was clearly competent for the Commissioner, and it was his duty, to decide whether the applicant was an assignee at all, and, if so, whether he was an assignee with such an interest as entitled him to a reissue within the meaning of the statutory provision upon the subject. The latter question is an important one. It is as yet unsettled, and awaits an authoritative determination.

The Commissioner says, in his answer to the rule, that he could not examine the application, because none had been filed in the Patent Office.

This position is untenable. It is averred in the petition, and not denied in the answer—and, therefore, as in other like cases of pleading, to be taken as conceded—that the application was filed with the acting Commissioner. It is also admitted, in the answer, that the requisite amount of fees had been paid by the relator, but, it is added, that it had not been placed to the credit of the office, and was in the hands of the chief clerk, subject to the relator's order.

The relator had done all in his power to make his application effectual, and had a right to consider it properly before the Commissioner.

It was so. If it was not, a *mandamus* would clearly lie to compel the Commissioner to receive it. It was his first duty to receive the application, whatever he might do subsequently. Without this initial step there could be no examination, and, indeed, no rightful knowledge of the subject on his part. Examination and the exercise of judgment, with their proper fruit, were to follow, and they did follow.

The Commissioner found the question, whether the assignee was such a one as the law entitled to a reissue, lying at the threshold of his duties? It required an answer before he could proceed further. His decision was against the appellant. His examination of the subject was thorough, and his conclusion is supported by an able

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and elaborate argument. It was made a part of his reply to the rule, and is found in the record.

From this decision, whether right or wrong, the relator had a right, under the statute, to appeal.

If the *mandamus* had ordered the Commissioner to allow the appeal, we should have held the order under which it was issued to be correct. But the order was that he should proceed to examine the application. That he had already done. The preliminary question which he decided was as much within the scope of his authority as any other which could arise. Having resolved it in the negative, there was no necessity for him to look further into the case. Entertaining such views, it would have been idle to do so. *The question* was vital to the application, and its resolution was fatal, so far as he was concerned. Only a reversal by the tribunal of appeal could revive it, and cast upon him the duty of further examination.

The principles of law relating to the remedy by *mandamus* are well settled.

It lies where there is a refusal to perform a ministerial act involving no exercise of judgment or discretion.

It lies, also, where the exercise of judgment and discretion are involved and the officer refuses to decide, provided that, if he decided, the aggrieved party could have his decision reviewed by another tribunal.

It is applicable only in these two classes of cases. It cannot be made to perform the functions of a writ of error.

In *Decatur v. Paulding*, 14 Peters, 515, referring to an act of Congress under which the relator in that case claimed a pension which had been refused her by the Secretary of the Navy, this court said: "If a suit should come before this court which involved the construction of any of these laws, the court certainly would not be bound to adopt the construction given by any head of a department; and if they supposed his decision to be wrong, they would of course so pronounce their judgment. But their construction of a law must be given in a case in which they have jurisdiction, and in which it is their duty to interpret the act of Congress in order to ascertain the rights of the parties in the cause before them. The court could not entertain an appeal from the decision of one of the secretaries, nor reverse his judgment in any case where the law authorizes him to exercise discretion or judgment; nor can it by *mandamus* act directly upon the officer, and guide or control his judgment or discretion in the matters committed to his care in the ordinary discharge of his official duties. . . . The inter-

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ference of courts with the performance of the ordinary duties of the executive department of the government would be productive of nothing but mischief, and we are quite satisfied that such a power was never intended to be given to them."

This case, as presented to the court below, was within neither of the categories above mentioned. The court, therefore, erred in making the order to which the Commissioner objected.

The main question passed upon by the Commissioner, and which was supposed to underlie this case, is not before us for consideration. If it were, as at present advised, we are not prepared to say that the decision of the Commissioner was not correct.

The order of the court below, awarding the *mandamus*, is reversed with costs, and it is ordered by this court that the application of the relator be by that court

OVERRULED AND DISMISSED.

PACKET COMPANY v. SICKLES.

(5 Wallace, 580.)

1. Where the record of a former suit is offered in evidence, the declaration setting out a special contract, but not saying whether it was written or parol, and where jurors who were impaneled in the former suit are brought to testify that the contract declared on in the second suit was the same contract that was in controversy in the former one, and was passed on by them, testimony may be given on the other side that the contract was a parol one; so as to let in a defense of the statute of frauds.

[In the District of Columbia, in which the suits in this case were brought, the British statute of frauds, providing that "no suit shall be brought to charge any person upon any agreement that was not to be performed in one year, unless there was some memorandum or note in writing of the agreement," was in force. And the fact that the contract declared on was a parol one, and so within the statute, was one of the matter meant to be relied on by the defendants in the second trial.]

2. A contract where performance is to run through a term of years, but which, by its tenor, may be defeated at any time before the expiration of the term—*ex. gr.*, a contract to pay for a right to use an invention, on a certain boat, so much a year during the term of a patent having twelve years yet to run, "if the said boat should so long last," is within the clause of the statute quoted in the preceding paragraph.

In this case, which had become somewhat complicated by several trials below, and which had been in this court on error more than once, and was now returned with a mandate for a *venire de novo*, the court makes two observations over and above the points above stated as adjudged:

- (i) That the secret deliberations of the jury or grounds of their proceedings while engaged in making up their verdict, are not competent or admissible evidence of the issues or finding; but that their evidence should be confined to the points in controversy on the former trial, to the testimony given by the parties, and to the

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questions submitted to the jury for their consideration; and that then the record furnishes the only proper proof of the verdict.

- (ii) That where the extrinsic proof of the identity of the cause of action is such that the court must submit the question to the jury as a matter of fact, any other matters in defense or support of the action, as the case may be, should be admitted on the trial, under proper instructions.

THIS was a suit brought in the Supreme Court (the former Circuit Court) of the District of Columbia to recover damages under a special contract set forth in the declaration.

The contract, in substance, was, that on the 18th of June, 1844, the plaintiffs below, Sickles & Cook, and the Washington, &c., Steam Packet Company, the defendants, agreed that Sickles & Cook should attach, for use, to a steamboat owned by the company, the Sickles cut-off, a certain patented contrivance which was designed to effect the saving of fuel in the working of steam engines; and that, in consideration thereof, if the said cut-off should effect a saving in the consumption of fuel, the company would use it on their boat *during the continuance of the said patent, IF the said boat should last so long*, and that they would, for the use of the cut-off, pay to the plaintiffs, weekly, three fourths of the value of the fuel saved. *The patent had, at the date of the alleged contract, yet twelve years to run.* The declaration set forth further, that it was agreed between the parties that the saving of the fuel caused by the use of the said cut-off should be ascertained by taking two piles of wood of equal quantity and burning one pile without and the other with the use of the cut-off, and thus to ascertain how much longer the boat would run, under the same circumstances, with the use of the cut-off than without, and that the proportion of savings as agreed upon above should be paid by the defendants. It alleged finally, that this experiment had been fairly made, and showed a saving of fuel by the use of the cut-off of thirty-four per cent.

The plaintiffs accordingly claimed the value of three-fourths of the fuel thus saved, between certain dates specified.

The defendants pleaded the general issue.

On the trial the plaintiffs, to support the issue, gave in evidence the record of a former trial between the same parties on the same contract as alleged, for payments due when the writ in that case was issued, in which trial a verdict and judgment had been rendered in their favor.

The declaration in the record of this former trial contained four counts:

1. A special count on the contract, corresponding in all respects with that set out in the declaration in the present suit.

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2. A common count for compensation for the use of the cut-off by the defendants on their boat before that time had and enjoyed, and for such an amount as it was reasonably worth.

3. A common count for money had and received; and

4. A special count on a contract in substance like the first, with the difference hereinafter stated: It recited that, in consideration the plaintiffs had before that time attached the said Sickles cut-off to the engine of the defendants' boat, and had agreed that they should have the use of it during the continuance of the patent right, if the boat should last so long, they, the defendants, undertook and agreed to pay the plaintiffs three fourths of the value of the fuel saved by the use of the cut-off; that a large quantity of the fuel, to wit, one thousand cords of wood, of the value of \$2,500, had been saved, yet the defendants, not regarding their promise, &c., have refused, &c. The difference between this and the first count consists mainly in the omission of any agreement to ascertain the saving of fuel by the experiment.

To the declaration in this former suit, whose record was thus offered in evidence, the defendants had pleaded the general issue.

It should be here mentioned that this suit had been in this court before. It was here in 1860. (See the case in 24 Howard, 334.) On a trial from the result of which the writ of error then came, a record of a former trial had also been offered in evidence; apparently the same offered in the suit to whose result the present writ was taken.

The record offered in that previous trial contained a declaration having two counts upon the contract, with the common counts, a plea of the general issue, a general verdict for the plaintiffs *on the entire declaration*, and a judgment on the first count; a count similar to the counts in the declaration in the suit then pending.

Besides this testimony of the contract, the plaintiffs proved on that previous trial the quantity of fuel used in running the boat, and relied upon the rates as settled to determine their demand, and insisted that the defendants were estopped to prove there was no such contract, or to disprove any one of the averments in the first count of the declaration in the former suit, or to show that no saving of the wood had been effected; or to show that the so-called experiment was not made pursuant to the contract, or was fraudulently made, and was not a true and genuine exponent of the capacity of the said cut-off; or to prove that the said verdict was in fact rendered upon all the testimony and allegations that were submitted to the jury, and was in point of fact rendered, as by the

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record it purported to have been, upon the issues generally, and not upon the first count specially.

The Circuit Court adopted these conclusions of the plaintiffs, and excluded the testimony offered by the defendants to prove these facts. On the matter coming here in 1860, by exceptions in that second suit, this court, in 24th Howard, pages 333, 346, remarked upon the exclusion of this testimony as follows:

"The record produced by the plaintiff showed that the first suit was brought apparently upon the same contract as the second, and that the existence and validity of that contract might have been litigated. But the verdict *might* have been rendered upon the entire declaration, and without special reference to the first count. It was competent to the defendants to show the state of facts that existed at the trial, with a view to ascertain what was the matter decided upon by the verdict of the jury. It may have been that there was no contest in reference to the fairness of the experiment or to its sufficiency to ascertain the premium to be paid for the use of the machine; or it may have been that the plaintiffs abandoned their special counts and recovered upon the general counts. The judgment rendered in that suit, while it remains in force, and for the purpose of maintaining its validity, is conclusive of all the facts properly pleaded by the plaintiffs; but when it is presented as testimony in another suit, the inquiry is competent whether the same issue has been tried and settled by it."

Considering, therefore, that the Circuit Court had erred in holding the Packet Company estopped by the proceedings in the first suit from any inquiry in respect to the matters in issue, and actually tried in that cause, this court reversed the judgment given against it, and the case went down for trial a second time; the trial, namely, after which the present writ of error was taken.

On this new trial the plaintiffs called several of the jurors who had been impaneled in the former trial, to give evidence of the testimony then given, and also as to the matters in contest before the court on that trial; the purpose in introducing this extrinsic evidence having been to prove such facts as, in connection with the record, would show that the same contract was in controversy in the second suit, and had been conclusively adjudged in their favor. [Many of these jurors, it may be remarked, while stating the particular grounds on which they found the verdict, and speaking of a contract that was before them, did not all speak so definitely as to the terms of the contract as to make it easy to say whether they

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described such a one as was set forth in the first count, or such a one as was set forth in the last count.]

When the plaintiffs rested, the defendants offered a competent witness to prove that the only contract given in evidence on the former trial was by parol, *and not reduced to writing*; the purpose of this testimony having had obvious reference to a provision of the statute of frauds, in force in the District of Columbia; the words of the statute being: "That no suit shall be brought to charge any person upon any agreement *not to be performed in one year, unless there was some memorandum or note in writing of the agreement,*" &c.

The evidence thus offered was objected to, and excluded by the court. The defendants offered to prove, further, that the contract was by parol, *and to be performed at the time stated in the declaration*; which testimony was also objected to, and excluded, except as to the latter branch. The questions growing out of this exclusion of evidence were now before this court on a bill of exceptions for review.

Two questions were, accordingly, raised here:

1. Whether the evidence as above mentioned was rightly excluded.
2. Whether the contract, which it was sought to show was in issue in the former suit, was now to be regarded as valid. This question being suggested, of course, by the above-quoted section of the statute of frauds.

Messrs. Carlisle and Davidge, for the plaintiff in error:

I. The court erred in excluding the testimony:

1. Because the fact that the only evidence offered at the trial alleged to be an estoppel was parol evidence, was a fact proper for the consideration of the jury in weighing the evidence offered by the plaintiffs to show what the prior jury found.
2. Because the estoppel relied on was not an estoppel of record, in the strict sense, but was to be applied by the jury to the subject-matter by parol evidence.

As the case was tried, the court assumed the absolute truth of the evidence offered by the plaintiffs, and refused to submit that evidence to the jury, or to allow the defendants to offer any evidence based on the hypothesis that the estoppel might not be found as set up. In other words, the court undertook to determine the weight of the parol evidence.

3. Because the evidence, if admitted, showed that the testimony submitted at the former trial had relation only to the common

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counts. Evidence of a parol contract could not support the first count of the declaration in the former suit; nor could such evidence be objected to, as it was admissible as tending to show the measure of damages under the common counts.

We assert that if, in fact, the prior jury found only a parol contract, we are not estopped from denying its validity in law in the present case. We are estopped only from denying the particular points of facts found, to wit, a parol promise.

The fact, if true, that we did not, at the former trial, make objection on this ground was, at most, but an admission for the purposes of that case. It was an admission of law, which does not estop in any subsequent action. Questions of law are not submitted to, or found by a jury, but only the naked issue of facts. *Richardson v. City of Boston*, 19 Howard, 263; *Hughes v. Alexander*, 5 Duer, 488.

We maintain that the contract being in parol merely was void in law, since it was not to be performed within one year.

Taking it for granted, for the present, that it was void, cases show that courts go far in searching out the particular point of fact—the *punctum facti*—decided by the prior jury, and in holding such point to be set aside and different from the one at issue in the case on trial.

Thus, in *Carter v. James*, a case in the English Exchequer, (13 Meeson & Welsby, 137,) the defendant had given a bond, secured by mortgage for £600. The mortgage contained a covenant to pay the debts. The plaintiff sued upon the bond, but the defendant set up a usurious agreement, and averred that the bond was given "in pursuance of that agreement," and so was void. The plaintiff replied that it was not given in pursuance of that agreement, and upon this issue was joined and a verdict found for the defendant. Afterwards, the plaintiff sued upon the covenants contained in the mortgage, it being confessedly for the same debt. The defendant pleaded the former verdict by way of estoppel, but, on demurrer, the plea was held bad, on the ground that the point of fact found in the former case was no answer in this; that point being that the bond was given in pursuance of the complainant's agreement, whereas in the present case the point was whether the covenant was so given, and whether the agreement itself was usurious.

The covenant was an agreement to pay the same debts as were named in the bond; and if the bond was given in pursuance of the complainant's agreement, the inference is irresistible that the covenant was so also; yet the court made a distinction.

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In the prior case the plaintiff had not denied the fact of a usurious agreement, but had by his pleading virtually admitted it for the purposes of that case. Held (Alderson, B.) that his so admitting did not estop him on that point, as it was one on which the jury did not pass.

So in the present case, we deny that there was a written contract. We are not estopped from doing so by our not having denied it at the former trial, nor by the jury finding that there was a parol contract.

In *Burlen v. Shannon*, 14 Gray, 433, a prior judgment had been obtained against the defendant for the board, for a certain period, of his wife, who had left his house, she being justified in doing so, it was asserted, on the ground, first, of his cruelty, and, second, of his consent. On a suit to recover board for a subsequent period, the ground then being that the wife was absent from cruelty, (not his consent,) the former verdict was set up as an estoppel. But its being so was denied on the ground that it was dubious whether the jury found cruelty, and that it must be left to the present jury to decide, from the evidence produced to them, what particular fact (of the two alleged) the former jury found.

In *Sawyer v. Woodbury*, 7 Gray, 499, in the same court, a plaintiff had brought an action of covenant, alleging several distinct breaches. The jury found a general verdict in his favor. In a subsequent suit he set up one of those breaches, and claimed the former verdict as an estoppel. But the court held that evidence might be adduced to enable the jury to decide which breach it was the prior jury found.

II. The alleged contract, if merely parol, was void.

The statute avoids all contracts not "to be" performed within one year—meaning acts agreed not to be so performed; acts agreed to be done beyond the end of one year. Now, the acts stipulated to be done by the defendant in this case were, as alleged, to pay the money at certain intervals throughout the term of twelve years. In order to perform the contracts, the defendant must make these payments.

In case the boat ceased to exist during that term, the defendants would then, indeed, be excused from paying afterwards; but this would be a defeasance, as if by a condition subsequent, not a performance of the contract.

Had the words "if the boat shall last so long" not been inserted, there can be no question that the alleged agreement would be void. Can these words cause a difference? The agreement was, not to pay so long as the boat should last. If that had been the

Argument for the defendant in error.

agreement, then it might possibly have been fully performed in one year. But the agreement was, to pay for twelve years, though it was provided that such payments for that period might be excused and dispensed with, if the boat should previously cease to exist.

The fact that further performance may be thus dispensed with will not take the case out of the statute. *Birch v. Earl of Liverpool*, 9 Barnewall and Cresswell, 392; *Roberts v. Tucker*, 3 Exchequer R., 632; *Dobson v. Collis*, 1 Hurlstone and Norman, 81.

Mr. Bradley, contra.

1. By the testimony of the former jurors, it appears that the contract specially declared on in the first two counts of the declaration in the second cause—the experiment provided for in that contract; the result of that experiment, and the consequent saving of fuel to the defendants—were the main issues in that cause, and were found by that jury.

Now, it will thus be seen that there are only two questions:

1. Was the verdict and judgment on the former trial conclusive on all the questions directly in issue on that trial, upon the proof offered by the plaintiffs, if believed by the jury?

2. Could the defendants go *behind* that verdict and judgment while the plaintiffs confined themselves to proof of what was then *in issue* and tried by the jury?

As to the first, we submit that it was, and that the court below was right in rejecting all evidence tending to show that no such contract had been made, or that the contract was not in writing, or that the experiment was insufficient to establish the rate of saving, or that it had been unfairly or fraudulently conducted. All these matters were involved in the issues raised by the two counts in the declaration and the pleas in the former action, and passed upon by the jury, as shown by the witnesses.

The other question may be more novel; but, according to general principles of law, and according to the settled law of Maryland, by which it is to be determined, is free from difficulty.

II. *As to the statute of frauds.*

If the contract was within the statute, the fact whether it was in writing or not was directly in issue in the first suit. If the defendant then waived the defense (if this was one) arising from the contracts being but in parol, as he might, he should have offered evidence of that fact on the second trial. He did not make such offer. *None of the bills of exceptions assert that it was not set up in that action.* If it had been, and if it was a defense, the suit could not have been sustained; which it was completely.

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The authorities from *Peter v. Compton*, reported by Skinner, page 353, to this day are numerous to show that the case was not within the statute.

What was this contract? It was one to put a machine on defendants' boat, to be paid for by a share of the savings of fuel caused by its use, to be ascertained as soon as the machine was in working order: that share to be paid for, from time to time, whenever demanded. The contract might run on to the expiration of the patent, or it might be terminated the next day. There is nothing from which it can be inferred that the parties understood it could not be performed within the year. It would have been completed by the loss or destruction of the boat at any time during the year, a matter in terms provided for.

There is a distinction between a performance which shall complete, and one which may defeat the contract within the year. If it can be completed within the year, (as this one might have been,) it is not brought within the statute by the fact that it may run on for many years. See the authorities in support of this proposition, collected in Browne on the Statute of Frauds, 2d edition, ch. 13, §§ 272, 6, 7, 8, and 9.

Mr. Justice NELSON delivered the opinion of the court.

When this case, or one of the class, was formerly before this court, (as reported in 24 Howard,) in which the record of the former recovery was in evidence, it was claimed that, without any extrinsic evidence, it concluded the defendants from again denying the existence of the contract, or from disproving any other of the averments in the first count of the declaration, and it had been so ruled by the court below.

This court, when the case came up on error, agreed that the record was properly admitted as evidence of the former trial between the parties, but held the pleadings, verdict, and judgment did not furnish the necessary proof to show that the contract in controversy in the suit then on trial had been before agitated, and conclusively adjudicated in the former trial in behalf of the plaintiffs; and that the verdict had been rendered upon the entire declaration, and without special reference to the first count.

The record, with the pleadings and verdict, furnished evidence that the same matters might have been litigated on that trial, and afforded ground for the introduction of extrinsic evidence to show that the same contract had been in contest before the court, and had been referred to the decision of the jury, but nothing more. For this reason the judgment was reversed, and a new trial ordered.

Opinion of the court.

Taking this view of the application and effect of the record of the former trial, the plaintiffs introduced in this case extrinsic evidence, and have endeavored to prove the necessary facts which, in connection with the record, would lead to the conclusion that the same contract was in controversy in the former suit, and had been conclusively adjudged in their favor. But this extrinsic evidence was opened to be controverted on the part of the defendants. As the record itself did not furnish evidence of the finding of the existence or validity of the contract in the former suit, and hence extrinsic proof was required to this effect, it was of course competent for the defendants to deny and disapprove both, as in so doing they did not impeach the record, but only sought to disprove the evidence introduced by the plaintiffs.

The rejection of this evidence, therefore, offered by the defendants on the trial, was error. Whether or not the contract, as proved on the former trial, rested in parol or was in writing, was material. If in writing, there could be no controversy in fact in respect to its terms or stipulations; and its construction and legal effect belonged to the court to determine. If it rested in parol, its terms and conditions depended upon the extrinsic proof, and hence the materiality of the first question put to the witness, as preliminary to further proof. It was important to settle the terms of the contract in evidence on the former trial, in order to determine whether it was the same as the one then in controversy, and, resting in parol, these terms depended very much upon the testimony in the case.

There is another view in this branch of the case that must be noticed. As we have seen, the declaration in the former suit contained four counts, to which the general issue was pleaded, and a general verdict for the plaintiffs. The first and fourth counts set up two different special contracts relating to the same subject-matters, and which constituted the cause of action between the parties. Now, the extrinsic evidence furnished on the part of the plaintiffs as to the former trial, and the grounds of proceeding therein, tended to prove either count, and was sufficient to have justified the jury in finding either contract. These contracts as thus set forth, were identical, with the exception of the agreement to settle the proportion of fuel saved by an experiment, which had been made, and resulted in the saving, by the use of the cut-off, of three-fourths of the fuel as used by the old throttle valve. The jury, therefore, might have found in favor of the plaintiffs on the contract as set forth in the fourth count, even if they disbelieved the proof of the agreement as to the mode of settling the proportion of fuel saved. Many of the jurors called and examined speak of a contract between

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the parties in respect to the use of the Sickles cut-off, but so indefinitely it is impossible to determine whether the testimony related to the one set out in first or fourth counts, and no attempt was made to distinguish between the one or the other on the trial.

As we understand the rule in respect to the conclusiveness of the verdict and judgment in a former trial between the same parties, when the judgment is used in pleading as a technical estoppel, or is relied on by way of evidence as conclusive, *per se*, it must appear, by the record of the prior suit, that the particular controversy sought to be concluded was necessarily tried and determined —that is, if the record of the former trial shows that the verdict could not have been rendered without deciding the particular matter, it will be considered as having settled that matter as to all future actions between the parties; and further, in cases where the record itself does not show that the matter was necessarily and directly found by the jury, evidence *aliunde* consistent with the record may be received to prove the fact; but, even where it appears from the extrinsic evidence that the matter was properly within the issue controverted in the former suit, if it be not shown that the verdict and judgment necessarily involved its consideration and determination, it will not be concluded. *Wood v. Jackson*, 8 Wendell, 10, 16, 31, 36; *Washington, &c., Packet Co. v. Sickles*, 24 Howard, 333, 343, 345; *Lawrence v. Hunt*, 10 Wendell, 80; Cowen & Hill's Notes to Phillips's Evidence, Part 2, n. 121.

In view of this doctrine, it is quite clear that the record of the former trial, together with the extrinsic proofs, failed to show that the contract in controversy in the present suit was necessarily determined in the former in behalf of the plaintiffs. We agree, if the declaration had contained but the first count, which had set out the contract in controversy in the present suit, the effect of the judgment would have been different. The verdict of the jury, then, could not have taken place without finding the existence and validity of the contract. But, as we have already shown, the record and evidence on the former trial are different, and tend to a different conclusion.

Some of the jurors in a former trial were permitted to testify as to the particular ground upon which they found the verdict. This testimony was not objected to, and therefore is not available as error here. But it is proper to say, that the secret deliberations of the jury, or grounds of their proceedings while engaged in making up their verdict, are not competent or admissible evidence of the issues or finding. The jurors oftentimes, though they may concur

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in the result, differ as to the grounds or reasons upon which they arrive at it.

The evidence should be confined to the points in controversy on the former trial, to the testimony given by the parties, and to the questions submitted to the jury for their consideration, and then the record furnishes the only proper proof of the verdict. *Wood v. Jackson*, 8 Wendell, 36; *Lawrence v. Hunt*, 10 Id., 85; *Hitchin v. Campbell*, 2 Blackstone, 827; Saunders on Pleading and Evidence, Pt. I, 260.

There is another suggestion, also, it may be proper to make, growing out of the rule, now very general both in the Federal and State courts, to admit the record of a former trial as evidence to conclude a party from agitating the same matters in a second suit, and that is where the extrinsic proof of the identity of the cause of action is such that the court must submit the question to the jury as a matter of fact; any other matters in defense or support of the action, as the case may be, should be admitted on the trial, under proper instructions. For, if the jury should find against the conclusiveness of the former trial, then this additional evidence would not only be material, but constitute the whole of the proof on which the cause of action or defense must rest. If the extrinsic evidence should be so conclusive that the court could properly hold the record to be conclusive, the trial would of course be at an end, so far as the matters embraced therein were identical with those in controversy. But, if not so conclusive, and the question must be submitted to the jury, then the record and evidence in respect to the former trial would constitute but one of the grounds relied on before the jury in support of the cause of action, or in defense, and be entirely consistent with any other grounds for the maintenance or defense of the suit in the possession of the parties. This must be so, for the reason that if the trial should, in the case contemplated, be confined to the issue growing out of the former trial, and the jury should find against its conclusiveness, nothing would be determined. The former trial, therefore, when its conclusiveness must be submitted to the jury, can be regarded only as a preliminary question, and the merits, independently of this question, should be heard and tried.

As the case must go down for another trial, and as the validity of the contract set out in the declaration may be involved in that trial, it is proper that we should express our opinion upon it, if, as it was offered to be proved, the contract was not in writing, but rested in parol.

We have referred particularly to the contract in the fore part of

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this opinion. The question raised is, whether or not it is within the statute of frauds, and therefore void. The law in this District, it is admitted, is a copy of the English statute on the subject.

The patent had some twelve years to run after the date of this contract, which was in June, 1844.

The words of the statute are: "That no suit shall be brought to charge any person upon any agreement that was not to be performed in one year, unless there was some memorandum or note in writing of the agreement," &c. Now, the substance of the contract is, that the defendants are to pay in money a certain proportion of the ascertained value of the fuel saved at stated intervals throughout the period of twelve years, if the boat to which the cut-off is attached should last so long.

The statute applies to contracts not wholly to be performed within the year. *Boydell v. Drummond*, 11 East, 142; *Broadwell v. Getman*, 2 Denio, 87.

It is insisted, however, that this contract is not within it, because it may, by the happening of a certain event—the loss or destruction of the boat—terminate within the year. The answer is, that the possibility of defeasance does not make it the less a contract not to be performed within the year.

In *Birch v. The Earl of Liverpool*, 9 Barnewall and Cresswell, 392, a contract for hire of a coach for five years, for a stipulated price per year, was held to be within the statute, although determinable by either party at any time within that period.

The same principle was again held in *Dobson and Another v. Espie*, 2 Hurlstone and Norman, 81. That case was the hiring of a traveler for more than a year, subject to a determination by three months' notice. Pollock, C. B., in delivering his opinion, stated that the object of the enactment was to prevent contracts not to be performed within the year from being vouched by parol evidence, when at a future period any question might arise as to their terms. No doubt, he further observes, formerly it was the practice to construe not only penal statutes, but statutes which interfered with the common law, as strictly as possible; but, in my opinion, that is not the proper course of proceeding. Alderson, B., observed: "The very circumstance that the contract exceeds the year, brings it within the statute. If it were not so, contracts for any number of years might be made by parol, provided they contained a defeasance, which might come into operation before the end of the first year."

We might refer to many other cases arising upon this statute. They are numerous, and not always consistent, for the reason,

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probably, given by Pollock, C. B., that the courts at first construed the enactment as strictly as possible, as it interfered with the common law. We think the construction given in the cases referred to is sound, and adopt it. The result is, that the contract in question is void, not being in writing. It is a contract not to be performed within the year, subject to a defeasance by the happening of a certain event, which might or might not occur within that time. All the mischiefs which the statute was intended to remedy apply with full force to it.

Judgment reversed, the cause remitted, and

VENIRE DE NOVO.

Mr. Justice MILLER, dissenting.

I dissent from the opinion of the court just delivered.

The points in the case before us for review are whether there was such a contract made as that set forth in the first count of the declaration, and if so, whether it was valid.

The only evidence of both these propositions offered by plaintiffs was the record of the former trial, and the testimony of certain jurors on that trial, tending to show that their verdict was based on the same contract which is described in the first count of the declaration in the present suit. If that testimony did not establish both these propositions, then plaintiffs failed in their action, for they offered no other evidence on that issue. If that testimony did show that the contract on which the verdict in the former suit was rendered was the one set up in the first count of the present declaration, then the record established both the making of that contract, and its valid character, for a judgment was rendered on that verdict which is still in full force and unreversed. If the testimony of the witnesses tended to show this fact, then it should go to the jury, for its sufficiency to establish the fact was for them and not for the court. No charge on this subject was asked by defendants, and none given by the court to which defendants excepted.

The main exception sustained by this court is to the offer of defendants to prove by a competent witness that the contract proved in the former trial was a parol contract.

Did this testimony have any tendency to disprove that of the witnesses of plaintiffs who testified as to the contract on which the former verdict was founded? I am not able to see it.

The witness did not propose to swear that the *terms* of the contract proved on the former trial differed from the terms of the contract counted on in this suit. He was expected to state that

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the only contract proved in the former suit was a parol contract. None of the witnesses of the plaintiffs said it was other than a parol contract. It was not pretended that the contract relied on in the first suit was a written contract.

It is said that if the contract was in parol, it is void as against the statute of frauds, and that question could not be concluded by the former judgment.

I think the law is otherwise. In the case of *Smith v. Whiting*, 11 Massachusetts, 445, the Supreme Court of Massachusetts says: "It is apparent from the pleadings that this very demand has been once tried and determined; and although the court may have decided wrong in rejecting the evidence in the former suit, yet this is not the way to remedy the misfortune. Exceptions might have been filed to the opinions of the judge, or a new trial had upon petition. We must presume that this very matter has been tried, and it is never permitted to overrule the judgment of a court having jurisdiction by another action." To the same effect is the case of *Grant v. Button*, 14 Johnson, 377, in the Supreme Court of New York.

If the law be, as claimed, that there can be no estoppel as to matter of law, but only as to matter of fact, what becomes of the estoppels by judgments rendered on demurrer? The authorities in favor of estoppels in this class of cases are numerous. The case of *Goodrich v. The City*, 6 Wallace, 566, decided at this term, is directly in point. There the judgment of the State court of Illinois on demurrer, in a former suit between the same parties, was held a bar, although it was intimated that if it had been an open question, this court might have differed with the Illinois court in the construction of the law. All decisions on demurrer must necessarily be on questions of law, for the demurrer admits the facts pleaded and only raises the questions of law which grow out of those facts. If the principle contended for were true, there could be no estoppel by demurrer.

If, then, the jury were satisfied from the record in the former case, and from the testimony of the witnesses, that the terms of the contract on which that verdict was founded were the same as the special contract set out in the present suit, then the verdict and judgment in that case established the existence and validity of that contract for the purposes of this suit, and whenever it may be called in question between the same parties in relation to the same transaction. And the testimony offered, if admitted, would have had no tendency to disprove either of those propositions, but only to show that the court erred in its judgment in the first suit.

Syllabus.

Again, if I understand the opinion aright, it is said that it must be made to appear from the record of the former suit, and the testimony of the witnesses, that the former verdict was *necessarily* founded on the contract set out in this suit. It seems to me that when this case was last here before, (as reported in 24 Howard,) the court then stated the proposition much short of this. For the opinion, after alluding to the indefinite character of the pleadings in many actions, says: "It was consequently decided that it was not necessary as between parties and privies that the record should show the question upon which the right of the plaintiff to recover, or the validity of the defense depended, for it to operate conclusively; but only that the same matter in controversy might have been litigated, and that extrinsic evidence would be admitted to prove that the particular question was material, and was in fact contested, and that it was referred to the decision of the jury." The rule, as I understand it, is that to render such former judgment conclusive it is only necessary to show that the same matter might have been decided, and actually was decided.

Again, it is said in the opinion that the testimony of the jurors in the former trial was incompetent to disclose the grounds of their decision in the former case. I think the rule in those courts where it is adopted at all, and it is rejected wholly in many, is that a juror cannot be permitted to impeach his verdict, but that he is never refused to sustain it. And this only applies to proceedings to set aside that verdict, and not to cases where the question of what was actually decided may arise in another proceeding.

On the whole, I am of opinion that there was but one question in the case, and that was whether the former verdict and judgment were based on the same contract counted on in the present suit, and that the evidence which went to the jury had a tendency to establish that fact, and the evidence rejected by the court had no tendency to disprove it.

RUBBER COMPANY v. GOODYEAR.

(8 Wallace, 153.)

1. Though a decree have been entered "as" of a prior date—the date of an order settling apparently the terms of a decree to be entered thereafter—the rights of the parties in respect to an appeal are determined by the date of the actual entry, or of the signing and filing of the final decree.
2. The question of sufficiency of an appeal bond is to be determined in the first instance by the judge who signs the citation; but after the allowance of the appeal it be-

Statement of the case.

comes cognizable here. It is not required that the security be in any fixed proportion to the amount of the decree; but only that it be sufficient. Where a decree had been for a large sum, (\$310,752,) security in less than double the amount was accepted by this court, and the appellants allowed to withdraw a bond given in such double sum.

APPEAL from the Circuit Court for the District of Rhode Island.
On motions.

Two motions were made in this cause. The first by the appellees, to dismiss the appeal, the other by the appellants to reduce the amount of the bond given on appeal. This had been required in double the amount of the decree; one for \$310,752.72.

The first motion was founded on the allegation that the final decree of the Circuit Court was entered on the 28th of November, 1866, while the appeal was taken to the December Term, 1867, of this court. And if the decree was, in fact, entered on the day alleged, it was obvious that the appeal should have been taken to the next term of this court, which commenced on the first Monday—that is to say, on the 3d day of December, 1866, and that the appeal actually taken would have to be dismissed as not authorized by law.

The important question then was, on what day the decree of the Circuit Court was actually made.

It appeared from the return of the clerk of that court to a *certiorari* issued from this court, that *on the 28th day of November, 1866*, the following order was entered on the minute book:

“1. In the cause in equity, *Goodyear, Executor, et al. v. Providence Rubber Company*. ORDERED, That the exceptions of the complainants to the master's report be, and the same are hereby, overruled.

“2. That the several exceptions of the respondents to the master's report be, and the same are hereby, overruled.

“3. That the report of the master in the case be, and the same is hereby confirmed.

“4. That the profits made by the respondents, in violation of the rights of the complainants, under the patents in this case, are the sum of \$310,757.72.

“5. That the complainants do recover of the respondents in this case the sum of \$310,757.72 and costs, taxed at —.

“Respondents enter an appeal in open court. If appeal is to act as a *supersedeas*, a bond is to be filed in ten days in double the amount of the judgment. If not, execution to issue for judgment and costs, and a bond for costs on appeal to be filed in the sum of \$500.

Opinion of the court.

"The district judge to decide upon the sufficiency of the securities."

Afterwards, on the 5th of December, 1866, two days after the commencement of the December Term of this court, a final decree was filed and entered as follows:

"Final decree. November Term, 1866. This cause came on to be heard at this term, upon exceptions to the final report made therein by Charles Hart, Esq., one of the masters of this court, bearing date —, and was argued by counsel, and thereupon, upon consideration thereof, it is ordered, adjudged, and decreed as follows."

Then followed three clauses identical with the first three of the previous order; and the two concluding clauses in these words:

"Fourth. That the profits made by the respondents in violation of the rights of the complainants under the letters patent number 1084, granted to Charles Goodyear, June 15, 1844, reissued December 25, 1849, extended June 14, 1858, and again reissued to Charles Goodyear, Jr., executor, November 20, 1860, in this case, are the sum of three hundred and ten thousand seven hundred and fifty-seven dollars and seventy-two cents.

"Fifth. That the complainants do recover of the respondents, the Providence Rubber Company, in this case, the sum of three hundred and ten thousand seven hundred and fifty-seven dollars and seventy-two cents, and costs, taxed at seven thousand four hundred and twenty-nine dollars and ninety-one cents."

This decree was "entered as of November 28, 1866," and signed "J. R. Bullock, district judge."

Messrs. Curtis, Ackerman, and C. S. Bradley, in support of the first motion; Messrs. Cushing, Payne, and Parsons, in support of the second,† and vice versa, contra.*

The CHIEF JUSTICE delivered the opinion of the court.

The final decree, filed and entered on the 5th of December, 1866, it will be seen, is for the most part in the very language of the order; but uses the introductory words appropriate to a decree, and describes particularly the patents in controversy, and ascer-

* Citing on the first motion, *Castro v. United States*, 3 Wallace, 49; *The Steamer Virginia v. West*, 19 Howard, 182; *Mesa v. United States*, 2 Black, 721. On the second, *Stafford v. Union Bank*, 16 Howard, 135.

† Citing on the first motion, *Seymour v. Freer*, 5 Wallace, 822; *Silsby v. Foote*, 20 Howard, 290. On the second, *Black v. Zacharie*, 3 Howard, 483.

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tains the amount of costs taxed. It omits the explanatory directions of the order as to the bond to be given on appeal; but the entry of the decree is followed immediately by another entry stating that an appeal was prayed for by respondents in open court, and was allowed, upon filing a bond within ten days with sureties to the satisfaction of the district judge.

Upon these facts we cannot doubt that the entry of the 28th of November was intended as an order settling the terms of the decree to be entered thereafter; and that the entry made on the 5th of December was regarded both by the court and the counsel as the final decree in the cause.

We do not question that the first entry had all the essential elements of a final decree, and if it had been followed by no other action of the court, might very properly have been treated as such. But we must be governed by the obvious intent of the Circuit Court, apparent on the face of the proceedings. We must hold, therefore, the decree of the 5th of December to be the final decree.

It appears to have been entered "as of the 28th of November." But this circumstance did not affect the rights of parties in respect to appeal. Those rights are determined by the date of the actual entry, or of the signing and filing of the final decree. That test ascertains, for the purpose of appeal, the time of rendering the decree, as the 5th of December, 1866. The appeal in this case, therefore, was rightly taken to the present term.

The motion to dismiss must therefore be denied

We have also considered the motion of appellants for the reduction of the amount of the bond for *supersedeas*.

In equity cases the appellate jurisdiction of this court attaches upon the allowance of the appeal. In order to make the appeal operate as a *supersedeas*, it is necessary for the appellant to give good and sufficient security for the prosecution of the appeal, and for all costs and damages that may be adjudged against him. This security is usually given by bond, with one or more sureties, and the twenty-second section of the judiciary act requires that it be taken by the judge who signs the citation on appeal. It is not required that the security shall be in any fixed proportion to the decree. What is necessary is, that it be sufficient, and when it is desired to make the appeal a *supersedeas*, that it be given within ten days from the rendering of the decree. The question of sufficiency must be determined in the first instance by the judge who signs the citation, but after the allowance of the appeal, this question, as well as every other in the cause, becomes cognizable here.

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It is, therefore, matter of discretion with this court to increase or diminish the amount of the bond, and to require additional sureties or otherwise as justice may require.

In this case the decree was for \$310,757.72 damages, and \$7,429.91 costs; and, following a usual practice, the judge required a bond in double the amount of the decree. We are satisfied that a bond in a much less amount will be entirely sufficient, and inasmuch as it appears that security in part, for the amount they might be decreed to pay, had been given by the present appellants before the bond on appeal was required, by a deposit of bonds of the United States, and other private bonds, amounting in all to a sum not less than \$200,000, we will order that the appellants have leave to withdraw the appeal bond now on file upon filing a bond in lieu thereof in the sum of \$225,000, with good and sufficient sureties, to the satisfaction of the clerk of this court.

FIRST MOTION DENIED; SECOND ONE GRANTED.

JACOBS v. BAKER.

(7 Wallace, 295.)

1. *Sembler* that an improvement in the plan of constructing a jail is not a subject of patent within the Patent Acts of 1836 or 1842.
2. Jacobs was not the first inventor of the improvements patented to him in 1859 and 1860, for improvements in the construction of jails.

JACOBS filed a bill in the Circuit Court for Southern Ohio against Baker, seeking relief for the infringement of four separate patents, which had been granted to him, Jacobs, *for improvements in the construction of prisons*. The bill sets forth the different patents.

The first, dated January 7th, 1859, was for an improvement in the construction of prisons, which the complainant set forth in his specification with very numerous plates and designs. The claim concluded thus: "What I claim as my invention, and desire to secure by letters patent, is a secret passage, or guard chamber, around the outside of an iron-plate jail, and between said jail and a surrounding inclosure, constructed and arranged, substantially as described, for the purpose set forth." [The purpose was to allow the keeper to oversee and overhear the prisoners, without their being conscious of his presence.]

The next patent was dated 20th December, 1859, and purported to be for an "improvement in iron-plate jails." The claim was for "the improved iron walls for the same, consisting of the fol-

Argument for the appellant.

lowing parts, arranged and united as set forth, to wit: the entire wall plates (A) having their edges closely abutting, the joint plates (e) united to and uniting the plate A, by rivets (i), which have their riveted ends inwards, and countersunk to the depth of the thickness of the plate A, in the manner and for the purposes herein set forth." This specification was also accompanied by numerous plates.

The third patent, dated 21st February, 1860, was for an "improvement in joining plates of metal," and was stated to be specially applicable to prisons. The claim was for "the construction of the joint, made by means of the closely abutting plates (A A), and the flat and semi-cylindrical plates B B, and rivets (c), substantially in the manner and for the purpose set forth." This, too, had numerous drawings.

The fourth patent, dated 24th July, 1860, was for an "improvement in iron prisons." The claim was for "constructing and arranging plate-iron cells in jails, separately from each other, with vertical spaces (e), between the cells, upon the same level, and horizontal spaces, between cells, arranged one above another, substantially as and for the purpose described." This was also profusely illustrated by drawings.

The bill, which averred that the complainant was the original and first inventor of all these improvements, and that the defendant was an infringer of his patents, asked that the defendant might answer the bill under oath, and be compelled to state how extensively and where he had sold the improvements patented, and to describe his modes of construction, &c.

The defendant did answer on oath, denying that the improvements were original with the complainant or new, but averring that they had been long in use, and setting out various jails in different parts of the country where they had been used in 1855, 1857, 1858, &c., all before the date of the patents relied on.

A large amount of testimony was taken on both sides, upon which the court below, considering that the defendant had established his case, dismissed the bill with costs. The case was now here on an appeal by the patentee.

Mr. Fisher, for the appellant, assuming that the matters embraced by the patents were the proper subjects of patents within the patent acts, went into an elaborate examination of the testimony to show that the inventions were original with the patentee.

No opposing counsel.

Opinion of the court.

Mr. Justice GRIER delivered the opinion of the court.

The Patent Act of 1836, § 6, (5 Stat. at Large, 119,) enumerated the discoveries or inventions for which patents shall be issued, and describes them as "any new and useful art, machine, manufacture, or composition of matter."

We have been at some loss to discover under which category to class the four patents which are the subjects of this bill. The complainant alleges that he has invented a new and useful improvement in the construction of jails. Now a jail can hardly come under the denomination of a "machine;" nor, though made by hands, can it well be classed with "manufactures;" nor, although compounded of matter, can it be termed a "composition of matter," in the meaning of the patent act. "But if the subject-matter be neither a machine or a manufacture, nor a composition of matter, then;" says an author on the subject of patents, (Curtis on Patents, 91,) it must be an art, for there can be no valid patent except it be for *a thing made*, or for the art or *process of making a thing*." Now, without attempting to define the term "art" with logical accuracy, we take as examples of it, some things which, in their concrete form, exhibit what we all concede to come within a correct definition, such as the art of printing, that of telegraphy, or that of photography. The art of tanning leather might also come within the category, because it requires various processes and manipulations. The difficulty still exists, however, under which category of the patent act an improvement in the construction of jails is to be classed, or whether under any.

The Patent Act of 1842, § 3, (5 Stat. at Large, 544,) gives a copyright for "new and original designs for manufacture, whether of metal or other material, for bust, statue, &c., or any new and original shape or configuration of any article of manufacture, to any inventor who shall desire to obtain an exclusive property, to make, use, and vend the same, or copies of the same."

Now, although the complainant might contend (as one would suppose from the immense number of plans, designs, and drawings with which the record in the case has been encumbered) that his patent could be supported under this act, yet still the difficulty remains whether the erection of a jail can be treated as the infringement of a copyright.

But waiving all these difficulties as hypercritical, and assuming the correctness of the positions taken, that whatever is neither a machine, nor a manufacture, nor a composition of matter, must (*ex necessitate*) be "an art;" that a jail is a thing "made;" and

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that the patent is for the "process of making it," let us examine the case as presented by the bill and answer.

The bill relies upon four several patents which it sets forth. They are dated January 7th and 20th December, 1859; 21st February and 24th July, 1860. It would seem from the quick succession of these patents and before the plans for building jails which they severally suggested could well be put practically into operation, and before any inquiry was made as to how other persons constructed jails, that as a new idea came into the complainant's mind, he immediately proceeded to the Patent Office to get it patented.

It is not necessary to the decision of this case to examine whether all or any of the suggestions made by the complainant were proper subjects of patent. The bill presents a number of interrogatories to the defendant and requires him to answer them under oath. The answer of the defendant denies that the complainant was the original and first inventor of the several inventions claimed, or any of them, and avers that the devices described in the complainant's patents were well known, and in use prior to the pretended invention of them by the complainant. And it enumerates many persons who had used devices before the complainant. The record presents no question of law as to the construction of these patents. The only issues were of fact. It would be a tedious as well as an unprofitable task to attempt to vindicate the correctness of our decision of this case by quoting the testimony and examining the volume of plates annexed to it. The decision could never be a precedent in any other case. It is enough to say that we see no reason to doubt the correctness of the decision of the Circuit Court on the issues made, or the pleadings.

DECREE AFFIRMED.

TYLER v. BOSTON.

(7 Wallace, 327.)

1. When a patent is claimed for a discovery of a new substance by means of chemical combinations of known materials, it should state the component parts of the new manufacture claimed, with clearness and precision, and not leave the person attempting to use the discovery to find it out by "experiment."
2. The doctrine of equivalents as applied to chemical inventions explained, and the distinction between mechanical inventions and chemical discoveries, where experiment is required to ascertain the effect of chemical substances, pointed out.
3. Whether one compound of given proportions is substantially the same as another compound varying the proportions, is a question for the jury.

Argument for the plaintiff in error.

TYLER brought suit, in the Circuit Court for Massachusetts, against the city of Boston, for infringement of a patent; the case being this:

The plaintiff professed to have discovered a new compound substance, being a combination of fusil oil with the mineral and earthy oils, which compound constitutes a burning fluid, "by which term," he says, "I mean a liquid which will burn for the purpose of illumination, without material smoke, in a lamp with a small solid wick, and without a chimney."

The claim of his patent which the defendant was charged with infringing was "the compound produced by the combination of the mineral or earthy oils with fusil oil, in the manner and for the purpose substantially as herein set forth; said compound constituting a new manufacture."

The component parts of this new manufacture were described as "by measure crude fusil oil one part, kerosene one part." This combination, the patent stated, might be varied by the substitution of naphtha or crude petroleum in place of kerosene, or a part of the kerosene by an *equal quantity* of naphtha or crude petroleum; "the exact quantity of fusil oil which is necessary to produce the most desirable compound must be determined *by experiment*."

The defendants used a burning fluid composed of naphtha seventy-two and fusil oil twenty-eight parts; and *experts*, chemists, proved that seventy-two parts *in bulk* of naphtha was the *substantial equivalent* of twenty-eight parts of kerosene.

The court below charged the jury, "that the patentee, in suggesting that naphtha might be substituted for kerosene, intended to describe the same proportion in the combination," and that the jury should understand the construction of the suggested substitution, to wit, naphtha for kerosene, as contemplating the same proportion of the two ingredients—that is, one and one, or fifty per cent. of one, and fifty per cent. of the other."

It charged further, that "whether one compound of given proportions is substantially the same as another compound varying in the proportions—whether they are substantially the same or substantially different—is a question of fact, and for the jury."

Under this charge the jury found for the defendant; and the case was now here on error.

Mr. Maynadier, for the plaintiff in error, contended, that the construction given by the court to the patent was erroneous, and that in view of the evidence as to the true relations and characters

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of the various oils, the claim should be construed to cover not only a compound composed of the particular ingredients in the proportionate bulks especially named in the specification, (that is to say, *crude fusil oil, one part by measure, and kerosene of the grade there described, one part by measure,*) and all other compounds composed of these ingredients in substantially the same proportionate bulks; but, in addition, all other compounds whose ingredients are *any* of the earthy or mineral oils, and *any* of the fusil oils, provided the quantity by measure of the mineral oil or oils used were ascertained to be substantially *equal in character*, or equivalent to the prescribed proportion of the prescribed grade of kerosene; and the quantity by measure of the fusil oil used were in like measure ascertained to be equal to the prescribed proportion of the prescribed *crude fusil oil*.

The whole spirit of the patent, in view of the perfectly well-known relations of naphtha and kerosene, and of refined and crude fusil oil, warrants the construction contended for, and there is nothing in the letter which militates against it, unless the statement that “a part of the kerosene may be replaced by an *equal quantity of naphtha or crude petroleum*” be construed to mean an *equal quantity in bulk*, which would make the statement false, and one that all persons skilled in the art would know to be false; while if “*equal*” be construed to mean “*equal in character*,” or “*equivalent*,” the statement is true, and in harmony with the rest of the specification, and with the chemical facts of the case.

Mr. Robb, contra:

The instruction given was correct. The language used by the patentee in describing his invention and the manner of compounding the same, is “full, clear, and exact,” in view of that construction adopted by the court below. To give it the construction contended for by the plaintiff, the obvious import of the terms used must be disregarded, and the same word must be taken in different senses, in the same sentence; that is, the word “*quantity*,” when used in reference to fusil oil, alcohol, or kerosene, means *measure*; but when used in reference to naphtha or petroleum, it must be taken to mean *weight*.

Mr. Justice GRIER delivered the opinion of the court.

The patent states that “the exact quantity of fusil oil which is necessary to produce the most desirable compound must be determined by *experiment*.¹”

Now, a machine which consists of a combination of devices is

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the subject of invention, and its effects may be calculated *a priori*, while a discovery of a new substance by means of chemical combinations of known materials is empirical and discovered by experiment. Where a patent is claimed for such a discovery, it should state the component parts of the new manufacture claimed with clearness and precision, and not leave the person attempting to use the discovery to find it out "by experiment." The law requires the applicant for a patent right to deliver a written description of the manner and process of making and compounding his new-discovered compound. The art is new; and therefore persons cannot be presumed to be skilled in it, or to anticipate the result of chemical combinations of elements not in daily use.

The defendants used a burning-fluid composed of naphtha seventy-two and fusil oil twenty-eight parts; and expert chemists proved that seventy-two parts *in bulk* of naphtha was the *substantial equivalent* of twenty-eight parts of kerosene.

This term "*equivalent*," when speaking of machines, has a certain definite meaning; but when used with regard to the chemical action of such fluids as can be discovered only by experiment, it only means *equally good*. But while the specification of the patent suggests the substitution of naphtha for crude petroleum, it prescribes no other proportion than that of equal parts by measure. The explanation that the "kerosene must be replaced by an *equal quantity* of naphtha" does not alter the case.

The charge which the court gave is a clear and intelligible statement of the principles of law which should govern the jury in making up their verdict. It said properly, that "whether one compound of given proportions is substantially the same as another compound varying in the proportions—whether they are substantially the same or substantially different—is a question of fact and for the jury."

If the jury in finding for the defendants have erred, the remedy is not in this court.

JUDGMENT AFFIRMED.

MOORE v. MARSH.

(7 Wallace, 515.)

Under the fourteenth section of the Patent Act of 1836, enacting that damages may be recovered by action on the case, to be brought in the name of the person "interested," the original owner of the patent, who has afterwards sold his right, may recover for an infringement committed during the time that he was owner. The

Argument for the appellant.

word "interested," means interested in the patent at the time when the infringement was committed.

ERROR to the Circuit Court for the Western District of Pennsylvania.

The eleventh section of the Patent Act of 1836, relating to the assignment of patents, thus enacts:

"Every patent shall be assignable in law either as to the whole interest, or any undivided part thereof, by any instrument in writing, which assignment, and also every grant and conveyance of the exclusive right under any patent to make and use, and to grant to others to make and use the thing patented, within and throughout any specified part or portion of the United States, shall be recorded," &c., &c.

And the fourteenth section, which relates to damages in suits, brought by the owners of patents, for infringement, says:

"And such damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought *in the name or names of the person or persons interested*, whether as patentees, assignees, or as grantees of the exclusive right within and throughout a specified part of the United States."

This statute being in force, Moore, a patentee, brought suit in the court below, against Marsh, for infringement. Marsh pleaded that *after* the date of the alleged infringement, he Moore, the patentee, had sold and assigned an undivided half of the patent for the district where the infringement was alleged to have been committed. To this plea, Moore demurred. The court having sustained the demurrer, and judgment being given accordingly, the case was brought here by the patentee on appeal.

The general question, therefore, was, whether a sale and assignment by a patentee of his patent right is, under the fourteenth section above quoted, a bar to an action by him to recover damages for an infringement committed *before* such sale and transfer? In other words, whether the words of the statute "*name of the person interested*," meant, as the plea assumed, "*persons interested in the patent at the time when the suit was brought*"; or meant, as the declaration assumed, *interested at the time when the cause of action accrued*.

The case was submitted on briefs.

Mr. S. S. Fisher, for the patentee, appellant, argued, that the latter, or interested in the damages, was the plain meaning; that it

Argument for the appellee.

would be unreasonable and contrary to all analogies of the law, that a simple assignment of a patent right should carry with it the right to all previous damages, carry with it all the damages which had ever accrued to its former owners in the whole course of the patent's life, and from the date of the letters patent; that back damages were not a matter inherent in, sticking to, and inseparable from the patent, but were a matter which belonged to the owner in his individual right. And this natural view, he considered, was supported by the authority of this court in *Dean v. Mason*, 20 Howard, 198.

Messrs. Henry Baldwin, Jr., and W. Bakewell, contra, argued, that the words of the fourteenth section of the statute meant interested *in the patent*, and not interested *in the damages*; and that this was manifest—

1. By comparing this fourteenth section with the eleventh section above cited.

2. By the fact that *licenses* were excluded, though they were frequently the only parties interested in the damages, while the plaintiff in such cases is the party interested as patentee, assignee, or grantee of an exclusive right, and had no interest in the damages.

3. From the decisions (as the learned counsel interpreted them) of this court and of several of the circuit courts. *Gayler v. Wilder*, 10 Howard, 493; *Washburn v. Gould*, 3 Story, 131, 167; *Suydam v. Day*, 2 Blatchford, 23; *Goodgear v. McBurney*, 3 Id., 32; *Blanchard v. Eldridge*, 1 Wallace, Jr., 340.

An opposite view, they contended, might lead to gross oppression. According to such view, a party who, in *mistake* as to his rights—and in these nice questions of mechanical principle, innocent mistake might well occur—may have infringed a patent during a number of years, is exposed at the end of the term to as many separate suits for infringement as there have been separate owners of the patent during the time he has been using it; and may have to defend against fifty separate actions brought by as many different plaintiffs for what has been a continuous act of user of the patented machine. Such a hardship could never be intended by Congress, and this court would not put a construction on the act fraught with such oppressive consequences. This argument, *ab inconvenienti*, was considered a sound one in this court, (the counsel argued,) in *Gayler v. Wilder*, 10 Howard, 494, where Taney, C. J. pressed it in behalf of the court, and by Mr. Justice Grier, in *Blanchard v. Eldridge*, 1 Wallace, Jr., 341, where, speaking of the eleventh section of the act, he says that "the act of Congress

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has not subjected *even a pirate* of the machine to fifty different suits by fifty several assignees, whose several interests might be affected."

Dean v. Mason, relied on by Mr. Fisher, (the counsel argued,) did not apply. It was an assignment *pendente lite*, and moreover of a mere license.

Mr. Justice CLIFFORD delivered the opinion of the court.

Viewed in the light of the admitted facts, the only question in the case is whether the assignment by the plaintiff to a third person of an undivided half of the right, title, and interest secured to him by his letters patent, subsequent to the alleged infringement, but before the commencement of his suit, is a bar to his claim to recover damages for such infringement.

Letters patent were granted to the plaintiff on the 18th of April, 1848, for a certain new and useful improvement in grain drills, in which it is alleged that he is the original and first inventor of the improvement. Original patent was for the term of fourteen years, but it was subsequently extended by the Commissioner of Patents for the term of seven years from and after the expiration of the original term. Alleged defects existed in the original specification, and in consequence thereof, the plaintiff, on the 3d of February, 1863, surrendered the letters patent, and the same were reissued to him in three new patents for separate and distinct parts of the invention for the unexpired portion of the original and extended terms of the patent.

Damages are claimed of the defendants for infringing the reissued letters patent from the day of the reissue to the 24th of February, 1865, as more fully set forth in the declaration.

Pleas to the declaration were subsequently filed by the defendants, and the record shows that they gave due notice of certain special defenses which they proposed to offer in evidence under the general issue, in pursuance of the act of Congress in such case made and provided. Before the day for the trial came, however, the parties filed an agreement waiving a jury and submitting the cause to the court, stipulating that the decision of the court should have the same effect as the verdict of a jury. Leave to amend was subsequently granted by the court to both parties.

Purport of the amendment to the declaration was, that the plaintiff was the sole owner of the letters patent for the county of Union, in the State of Pennsylvania, from the date of the reissued letters patent to the 24th of February, 1865, and that the defendants had infringed the same throughout that period, by making and using

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the invention, and vending the same to others to be used without his license or consent.

Defendants filed another special plea, in which they alleged that the plaintiff, when he commenced his suit, was not the owner of the exclusive right secured in the reissued letters patent within any part of the United States; that in certain States and districts he had parted with all his interest in the patent; and that, on the said 24th of February, he assigned and transferred an undivided half of all the residue of his right, title, and interest in the same, and, therefore, that the plaintiff had no right to bring this action in his own name against the defendants. Plaintiff demurred to the plea, and the defendants joined in demurrer. Parties were heard, and the court rendered judgment for the defendants, and the plaintiff sued out this writ of error.

Conceded fact is, that the plaintiff was the exclusive owner of the patent in the territorial district where the alleged infringement was committed, throughout the entire period of the infringement, as alleged in the declaration. Express allegation of the declaration is to that effect, and, as the plea is in avoidance and contains no denial of the matters alleged in the declaration, they must be considered as admitted, unless the matters alleged in the special plea are a sufficient answer to the action.

Briefly stated, the matter alleged in avoidance of the right of the plaintiff to maintain the suit is, that he, before he commenced the suit, but subsequent to the infringement, sold and assigned an undivided half of his patent for the territorial district where the infringement was committed, to a third person.

Patentees have secured to them, by virtue of the letters patent granted to them, the full and exclusive right and liberty, for a prescribed term, "of making and using, and vending to others to be used," their respective inventions or discoveries; and, whenever their rights, as thus defined, are invaded by others, they are entitled to an action on the case to recover actual damages as compensation for the injury. 5 Stat. at Large, 123, § 14.

Such damages may be recovered by action on the case in any Circuit Court of competent jurisdiction, to be brought in the name or names of the person or persons interested, whether as patentees, assignees, or as grantees of the exclusive right, as already defined, within and throughout a specified part of the United States. 5 Stat. at Large, 123, § 14.

Assignees and grantees, as well as the patentee, may, under some circumstances, maintain an action on the case for an infringement, in their own name, as appears by the express words of the

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act of Congress. An assignee is one who holds, by a valid assignment in writing, the whole interest of a patent, or any undivided part of such whole interest, throughout the United States. 5 Stat. at Large, 121, § 11.

Where the patentee has assigned his whole interest, either before or after the patent is issued, the action must be brought in the name of the assignee, because he alone was interested in the patent at the time the infringement took place; but where the assignment is of an undivided part of the patent, the action should be brought for every infringement committed subsequent to the assignment, in the joint names of the patentee and assignee, as representing the entire interest. *Herbert v. Adams*, 4 Mason, 15; *Curtis on Patents*, 3d ed., § 347; *Gayler et al. v. Wilder*, 10 Howard, 477; *Whittemore v. Cutter*, 1 Gallison, 430; *Woodworth v. Wilson*, 4 Howard, 712.

Settled view at one time was, that the grantee of a territorial right, for a particular district, could not bring an action on the patent in his own name; but the act of Congress having made him a party interested in the patent, it is now equally well settled that he may sue in his own name for invasion of the patent in that territorial district, as no one else is injured by any such infringement. *Tyler v. Tuel*, 6 Cranch, 324; *Gayler et al. v. Wilder*, 10 Howard, 477; *Curtis on Patents*, § 346.

Both assignees and grantees have an interest in the patent, but the terms are not synonymous, as used in the patent law. *Potter v. Holland*, Law's Digest, 157.

Grants, as well as assignments, must be in writing, and they must convey the exclusive right, under the patent, to make and use, and vend to others to be used, the thing patented, within and throughout some specified district or portion of the United States, and such right must be exclusive of the patentee, as well as of all others except the grantee. Suits for infringement in such districts, if committed subsequent to the grant, can only be brought in the name of the grantee, as it is clear that no one can maintain such an action until his rights have been invaded, nor until he is interested in the damages to be recovered.

Alleged infringement in this case was committed in the county of Union, in the State of Pennsylvania, and the admitted fact is, that the plaintiff, throughout the entire period of the infringement, was the sole owner of the exclusive right to make and use, and grant to others to make and use, the thing patented in that territorial district, by virtue of his original title as patentee, having

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never assigned or granted any right, title, or interest, within that county. 5 Stat. at Large, 121, § 11.

Grant that these views are correct, and it is clear that unless the plaintiff can maintain the action there can be no redress, as it is too plain for argument, that a subsequent assignee or grantee can neither maintain an action in his own name, or be joined with the patentee in maintaining it for any infringement of the exclusive right committed before he became interested in the patent. Undoubtedly the assignee *thereafter* stands in the place of the patentee, both as to right under the patent and future responsibility; but it is a great mistake to suppose that the assignment of a patent carries with it a transfer of the right to damages for an infringement committed before such assignment.

Comment upon the cases cited, as supporting this proposition, is unnecessary, as it is clear to a demonstration that they give it no countenance whatever. Such a proposition finds no support in any decided case, nor in the act of Congress upon the subject.

True meaning of the word interested, as employed in the last clause of the fourteenth section of the Patent Act, when properly understood and applied, is, that the right of action is given to the person or persons owning the exclusive right at the time the infringement is committed. Subsequent sale and transfer of the exclusive right are no bar to an action to recover damages for an infringement committed before such sale and transfer.

The reason for the rule is, that the assignee or grantee is not interested in the damages for any infringement committed before the sale and transfer of the patent. Correct interpretation of the words, person or persons interested, is, that the words mean the person or persons interested in the patent at the time when the infringement was committed, which is the cause of action for which the damages may be recovered. *Dean v. Mason et al.*, 20 Howard, 198.

Assignment was made in that case after suit was brought, but before the final decree. Proof of the fact was offered, and a motion filed to dismiss the case, but the court overruled the motion, because the assignees could have no interest in a suit for an infringement committed before their right accrued. *Kilborn v. Rewee*, 8 Gray, 415; 1 Hilliard on T., 521; *Eades v. Harris*, 1 Younge & Collier, 230.

Attempt is made to distinguish the case at bar from the rule established in those cases, but, in the view of this court, without success.

JUDGMENT REVERSED. NEW VENIRE ORDERED.

Statement of the case.

AGAWAM COMPANY v. JORDAN.

(7 Wallace, 583.)

1. In a suit in chancery under a patent, evidence of prior knowledge or use of the thing patented is not admissible, unless the answer contains the names and places of residence of those alleged to have possessed a prior knowledge of the thing, and where the same had been used.
2. The defense, "that the patentee fraudulently and surreptitiously obtained the patent for that which he knew was invented by another," is not a sufficient defense to a charge of infringement, unless accompanied by the further allegation, that the alleged first inventor was at the time using reasonable diligence in adapting and perfecting the invention.
3. The inventor who first perfects a machine, and makes it capable of useful operation, is entitled to the patent.
4. Where a master workman, employing other people in his service, has conceived the plan of an invention and is engaged in experiments to perfect it, no suggestions from a person employed by him, not amounting to a new method or arrangement which in itself is a complete invention, is sufficient to deprive the employer of the exclusive property in the perfected improvement.
5. Letters patent of long standing will not be declared invalid upon testimony largely impeached; as *ex. gr.*, where forty persons swear that the character of the witness for truth and veracity is bad; although very numerous witnesses on the other hand swear that they never heard his reputation in that way questioned.
6. On a bill in chancery, for an infringement of a patent, the allegation in an answer, of sale and public use "prior to the filing of an application for a patent," with the consent and allowance of the inventor, is insufficient, unless it is also alleged in the answer that such sale or use was more than two years before he applied for a patent.
7. Forbearance to apply for a patent during the progress of experiments, and until the party has perfected his invention and tested its value by practical experiment, affords no ground for presumption of abandonment.
8. Where a patent is extended by virtue of a special act of Congress, it is not necessary to recite in the certificate of extension all the provisos contained in the act.
9. A patentee claiming under a reissued patent cannot recover damages for infringements committed antecedently to the date of his reissue.

ERROR to the Circuit Court for Massachusetts, the suit having been one to restrain the use, by the Agawam Woolen Company, of a certain machine for manufacturing wool and other fibrous materials, patented to John Goulding.

The process formerly in use in the production of yarn from wool, was by a set of carding engines, a billy and a jenny; a series usually consisting of three carding machines, commonly called a first breaker, a second breaker, and a finisher, one billy and two jennies, sometimes two double carding machines being used instead of three single carding machines.

The wool was fed to the first carding machine, called the first breaker, on a feed table, and was doffed off the doffer of that machine by a comb. The material thus doffed off was taken to

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the second carding machine, called the second breaker, and was fed into it in the same manner as in the first, and upon leaving the doffer was either wound round a large cylinder, making what was called a lap or bat, or dropped on the floor. The material was then taken to the third carding machine, and was fed to it in the same way, and, by a roller and shell at the delivery end of this machine, was made into short rolls, which were about as long as this machine was wide. These short rolls were then taken to the billy, and were spliced together on the apron roll of the billy by children, by rubbing the rolls together with their hands, and were carried forward on the billy, after being so spliced together, by the apron roll, which fed them through the jaws of the billy to the spindles. The product of the billy was called roving. The roving was then taken from the billy and set up on cops to the jenny, upon which it was spun into yarn.

As early as 1812, Goulding, born in 1793, the son of a machinist, and from early years familiar in his father's factory with machines and machinery, sought to improve this long train of engines, called in their whole series "the carding machine." He thought that he could so improve it as to produce yarn from wool in a cheaper manner, of better quality, and in greater quantity than was produced by the old process. Engaged at different times in Massachusetts, at Worcester, Halifax, and, lastly, at Dedham, where, in 1823, he fixed himself as both a machinist and a manufacturer of textile fabrics, he only sought, for some years, to improve the billy; but, as experiments were made by him, he aimed, finally, at dispensing with the billy entirely, and accomplishing with four machines that which had previously required the use of five. His purpose was also to dispense with short rolls entirely, and get the perpetual or endless roll, and carry it through its different stages, from the crude wool until it became finally converted into yarn.

The result of his experiments and trials, extending over a long term of time, and after the use by him of very many devices, was, as he alleged, successful. He dispensed with the billy entirely, and by processes testified to by many witnesses as invented by him, and by himself so sworn to be, obtained a continuous or perpetual roll as the product of each carding engine; accomplished a successful mixing of the wool—as well where the same color was used, as where different colors were used; dispensed with a large amount of manual labor, and secured a larger product at half the expense as compared with the old process, a better and more uniform roving, and a better and more uniform quality of yarn.

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Such was his view and his case, as set forth in the bill.

But Goulding's claim to these high merits of invention were not conceded. There were witnesses also, chiefly one Cooper, of Concord, New Hampshire, who swore that he derived great aid from others. Specific conversations and admissions of Goulding, about the time of the alleged invention, were sworn to by Cooper. But his testimony was strongly impeached; and relationship, bad feeling, or interest were shown in others of the witnesses. As to Cooper himself, forty different persons swore that his general reputation for truth and veracity was bad. Very numerous ones, however, swore that they had not heard it called in question. This sort of testimony covered some hundred pages of the record.

Taken all together, this part of the case, on favorable assumption for the defendant, seemed somewhat thus: After Goulding came to Dedham, and had been experimenting there for a considerable time, one Edward Winslow, a blacksmith by trade, but if the testimony in his favor was to be believed, an ingenious man, came into his service. Winslow professed no skill out of his business, but made himself useful generally in whatever Goulding found it most convenient to set him to do; working generally in iron. He had no charge of Goulding's machine shop, but was not unfrequently in it. Goulding himself directed all that was done about machinery, whether as to making or as to altering it. In 1824, Winslow having been to a neighbor's factory, where certain devices, meant to produce long or endless rolls, and to serve as receptacles for the rovings, had been introduced on machinery for spinning yarn, Goulding, who had now nearly completed his improvement, and while he was diligently prosecuting his experiments, asked him what he thought of them. Winslow replied that the principle of them was good, but that the agencies employed were bad, and suggested certain substitutes (a spool and drum) for them. "You don't know anything," was Goulding's first reply. However, upon seeing an experiment, apparently at first successful, made at his own mill, on the basis of Winslow's idea, he exclaimed, "Winslow, you have got it. I will give you \$2,500 and half of what we can make." But the experiment broke down in the process of exhibiting it. Goulding then exclaiming, "Your plan isn't worth a cent. I would not give a fig for it," left the mill. Upon further conversation and consideration, Goulding saw merit in Winslow's suggestions, and having made them practicable by an addition of his own, (the "traverser," whose effect was to wind the roving evenly on the spool,) he adopted them, (instead of cans, the far less convenient agency previously

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used,) as two items of his far larger improvement. As it turned out in the result they proved useful.

It appeared, however, and was so assumed by this court, after a very minute statement (*infra*, pp. 198, 202,) in the terms of art, of many details of the matter, that it was only as an *auxiliary* part of Goulding's invention that they were of value, and that they did not make either the entire invention or any one of its separate combinations.

Goulding went on continuously engaged in perfecting his improvement, till November, 1826, before the middle of which month he filed his application for letters patent, and on the 5th December he received them for the whole combined invention. None of the devices described in his specifications were new, and the claims were for combinations arranged in a manner set forth.

The patented improvement soon came into universal use, and worked a revolution, both here and in Europe, in the art of manufacturing fibrous yarns. It has not been improved, but remains now what it was when the patent was granted.

The patent granted, as above mentioned, expired December 5, 1849. Goulding desired to make application for its renewal, but through erroneous information given him by the Commissioner of Patents, he failed to apply for the extension until too late for the Commissioner legally to entertain his application, and the patent expired accordingly as already stated. Congress finally, and after persistent efforts by Goulding, passed May 30, 1862, a special act, authorizing the Commissioner to entertain his application for extension as though it had been made within the time prescribed by law. This special act contained a proviso,

"That the renewal and extension shall not have the effect, or be construed, to restrain persons who may be using the machinery invented by said Goulding at the time of the *renewal and extension*, thereby authorized for continuing the use of the same, nor subject them to any claim or damage for having so used the same."

The patent was extended by the Commissioner August 30, 1862. The patent having been reissued July 29, 1836, was again reissued in June, 1864, having before this last date become vested in Jordan, the complainant, to whom the reissue was made.

The proviso of the act authorizing a renewal and extension, was not recited in the reissued letters patent. But the certificate of renewal and extension was made subject, in express terms, to the proviso contained in the act. In this condition of things, the Agawam Woolen Company, using certain machinery alleged to be the

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same with that now patented to Jordan, he filed his bill against them, praying for injunction, account, and other relief. The bill put specific and categorical interrogatories in reference to the fact of infringement. The defendants did not answer the interrogatories as put. They only denied the use of any machinery "in violation and infringement of any rights of the plaintiff, or that they are using, or have made, or sold, or used any machines not protected or covered by the proviso in the act of Congress;" and putting it to the court to say whether they should make further answer. The machinery which they did use, they began to use after the date of the extension, (the company not being incorporated at that date,) but before the surrender and reissue of June, 1864.

With this implied admission of infringement, the answer put the defense chiefly on four grounds:

First. "This defendant denies that the said Goulding ever bestowed any ingenuity upon the invention or improvement mentioned in either of the letters patent aforesaid, and alleges that the improvements therein described, were invented and applied by one Edward Winslow, then of Dedham, from whom said Goulding first obtained knowledge of the same, and fraudulently and surreptitiously obtained a patent on the 15th day of December as aforesaid, for that which he well knew was the invention of said Winslow, at and before the application by him for a patent, as set forth in said bill."

Second. That at the time of Goulding's application for a patent, the invention had been on sale, and in public use, with his consent and allowance, for a *long time*; and that he abandoned the same to the public. Sale and public use *for more than two years*, prior to the application for a patent, were not, however, alleged in the answer.

Third. That the certificate on the reissued letters patent of 1864, was not in conformity with the act of Congress, and did not contain the limitations or conditions as annexed to the patent, as extended; and, therefore, that the reissued patent was void.

Fourth. That the defendant's machinery, although built subsequently to the date of the extension, yet, having been in use before and at the time of the reissuing of that patent in 1864, was within the saving proviso of the act of Congress.

The court below decreed for the complainant, and the case was now here on appeal by the other side.

Mr. Robb, for the appellant—after remarking that nearly half a century had passed since the events which were the subject of in-

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vestigation, occurred; that nearly all of those who had personal knowledge of them, had been dead many years; and that, in every patent case, the loss of testimony affected the defendant more seriously than it did the plaintiff, since the defendant has upon him the burden of overcoming the presumption which the plaintiff derives from his patent alone—commented on the facts, arguing that Winslow was the undoubted inventor of the spool and drum—most important features of the mechanism patented—and that in regard to these, Goulding had no merit.

The efforts at impeachment of Cooper were to be received (the learned counsel argued) with great distrust. It was easy to bring men, in almost any case, who would swear before a commissioner, and from the bias of revenge or interest, that *they* would not believe a particular witness, and so to make a record the vehicle of scandal, which would never have been spoken if the witnesses had been in the presence of the court, under the restraints of law, when they told their stories. In this case, of course, the testimony had been taken in this private manner. The learned counsel then contended:

1. That the invention had been in use for more than two years, and had been abandoned, as appeared, by the delays of Goulding in getting a patent; moreover, he had not an extension until twenty-two years after the expiration of the first patent.

2. That the proviso in the act of Congress was a limitation of the authority vested in the Commissioner. The grant was to be limited “so that it shall not be construed” to vest, &c. Now by law, as is well known, no extension of a patent shall be granted by the Commissioner after the expiration of the term for which it was originally issued. *Prima facie*, therefore, this patent is void, and it is only by invoking the statute that it can be saved. Now, this being a private statute, it should be incorporated with, and accompany the exercise of the authority claimed under and by virtue of it.

3. That by a true interpretation of the act, the defendant's machinery came within the proviso of the act of Congress.

Messrs. B. R. Curtis and Stoughton, contra.

The patent is *prima facie* evidence that Goulding was the original and first inventor of the thing patented.

The answer charges a *fraudulent* and *surreptitious* appropriation, by Goulding, of Winslow's invention, and fraud is to be proved by the party alleging it.

To sustain this burden, it is not sufficient for the appellants to

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prove that Winslow, while a hired workman of Goulding, suggested mechanical means of carrying some part or parts of Goulding's plan into effect; he must prove that the entire plan of the invention, as described by Goulding in the original letters patent of December 15, 1826, was the sole invention of Winslow, for the answer does not set up a joint invention by Goulding and Winslow, but a several invention by Winslow, and a fraudulent and surreptitious appropriation of the entire invention by Goulding. *Pitts v. Hall*, 2 Blatchford, 234; *Alden v. Dewey*, 1 Story, 338, 339; *Dixon v. Moyer*, 4 Washington, 71, 72; *Teese v. Phelps*, McAllister, 48; *Washburn v. Gould*, (Story, J.,) 3 Id., 133; Webster's Patent Cases, 132, note e; *Allen v. Rawson*, 1 Manning, Granger & Scott, 574-577; *Eyre v. Potter*, 15 Howard, 56.

But these principles of law need not be invoked. There is no sufficient evidence that Winslow invented anything. The attempt is to overturn a title of forty years' standing on evidence that would not be trustworthy, even if it related to recent occurrences. To recollect specific language after the lapse of forty years, is impossible. Conversations are the least trustworthy of all kinds of evidence, even when alleged to be recent; but here, where they are confessed to have occurred upwards of forty years ago, no reliance can be placed on them. *Badger v. Badger*, 2 Wallace, 87; *Pennock v. Dialogue*, 4 Washington, 538; *Alden v. Dewey*, 1 Story, 339. The facility with which conversations can be either invented or distorted, the necessity of knowing all that was said, the occurrences which gave rise to the conversations, and the circumstances under which the conversations occurred, the inability of human memory to retain the precise language that was used, the proverbial fact of the different versions which different witnesses give even of recent conversations, the radical change in meaning which even the slightest transposition of language will sometimes make, all concur in showing that evidence of them is the most unsatisfactory testimony upon which a court of justice can act.

Moreover, forty witnesses have sworn that Cooper's general reputation for truth is bad. Their testimony is affirmative, while all the counter testimony is negative. When we consider the facility with which bad men, with some good qualities, can rally friends in support of their character, it is not surprising that many should have appeared to assist Cooper. In a place as large as Concord, there are undoubtedly men whose characters for veracity are bad, and yet many witnesses could be produced who never heard their characters spoken of in respect to veracity. The testimony here is simply negative, not showing—because some of the witnesses have

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not heard Cooper's character pronounced bad—that it is not bad, but only showing that they have not heard it stated to be so. It is impossible, we submit, for any man's character for truth and veracity to be otherwise than bad, when forty witnesses swear that it is bad, even if ten times that number should be produced to swear that they had never heard it questioned.

The remaining grounds of defense have no foundation in the facts of the case, nor in the law of patents by any possible view of it.

Mr. Justice CLIFFORD delivered the opinion of the court.

Patentees acquire, by virtue of their letters patent, if properly granted and in due form, the full and exclusive right and liberty of making, using, and vending to others to be used, their respective inventions for the term of years allowed by law at the time when the letters patent were issued. Such exclusive right and liberty may be held and enjoyed by the patentee throughout the entire term for which it is granted; or he may assign the letters patent, by an instrument in writing, either as to the whole interest or any undivided part thereof; or he may grant and convey to another the exclusive right under the patent to make and use, and grant to others to make and use, the thing patented, within and throughout any specified district. 5 Stat. at Large, 119, 121.

Damages may be recovered by an action on the case for any infringement of that exclusive right and liberty; or the party aggrieved may, in any case, at his election, bring his suit in equity and pray for an injunction to prevent the violation of the same; but the express provision is, that all such actions, suits, and controversies shall be originally cognizable, as well in equity as at law, by the Circuit Courts of the United States, or any District Court having the powers and jurisdiction of a Circuit Court. 5 Stat. at Large, 123, 124.

Jurisdiction of such cases is exclusive in the Circuit Courts, subject to writ of error and appeal to this court, as provided by law; but the requirement is, that the suit must be brought in the name of the person or persons interested, whether patentees, assignees, or as grantees, as aforesaid, of the exclusive right within a specified locality. 5 Stat. at Large, 124.

Present suit was in equity, and was founded on certain reissued letters patent granted to the complainant on the twenty-eighth of June, 1864, as the assignee, by certain mesne assignments, of John Goulding, who was the original patentee, and who, as alleged, was the original and first inventor of the improvement. Original

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patent was granted December 15th, 1826, for the term of fourteen years, and was, as alleged, for a new and useful improvement in the mode of manufacturing wool and other fibrous materials; but the claims of the specification were defective, and it was surrendered on that account, and reissued July 29th, 1836, for the residue of the original term.

Representations of the complainant were, that the original patentee, without any neglect or fault on his part, failed to obtain by the use and sale of the invention a reasonable remuneration for his time, ingenuity, and expenses employed and incurred in perfecting the invention, and introducing the same into use within the time for which the patent was originally issued, and that he failed also, by accident and mistake, to obtain an extension of the patent before the expiration of the original term.

Power of the Commissioner to renew and extend the patent having expired, the allegation was that the original patentee applied to Congress, and that Congress, on the thirtieth of May, 1862, passed an act for his relief. Pursuant to that authority, the bill of complaint alleged that the Commissioner, thereafter, on the thirtieth of August, in the same year, renewed and extended the patent, in due form of law, for the further term of seven years from and after that date, subject to the provisions contained in the act conferring the authority.

Derivation of the title of the complainant is fully set forth in the bill of complaint, but it is unnecessary to reproduce it, as it is not the subject of controversy in this case. Possessed of a full title to the invention by assignments, the complainant, as such assignee, surrendered the letters patent, and the Commissioner, on the twenty-eighth of June, 1864, reissued to him the original patent, as extended under the act of Congress, for the residue of the extended term.

Founded upon those letters patent, the bill of complaint alleged that the assignor of the complainant was the original and first inventor of the improvement therein described, and the charge is that the corporation respondents, having full knowledge of the premises, and in violation of the complainant's exclusive rights and privileges, so acquired and secured, have since the date of the reissued letters patent, and without his license or consent, made, used, and sold, and continue to make, use, and sell, in large numbers, cards, jacks, and machinery, embracing and containing mechanism substantially the same in principle, construction, and mode of operation as the improvement so acquired and owned by the complainant.

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Prayer of the bill of complaint was for an account, and for an injunction, and for such other and further relief as the nature and circumstances of the case shall require.

Respondents appeared and filed an answer, and proofs were taken by both parties, and they were heard in the Circuit Court upon bill, answer, replication, and proofs, and a final decree upon the merits was rendered for the complainant, and thereupon the respondents appealed to this court.

Numerous defenses were set up in the answer, but none of them will be much considered except such as are now urged upon the consideration of the court.

The grounds of defense specially enumerated in the brief of the appellants, and urged in argument, are as follows:

1. That the combinations set forth in the several claims of the patent were first invented by one Edward Winslow, and that neither of them was original with the assignor of the complainant.

2. That the invention, at the time the application for the original patent was made, had been on sale and in public use, with the consent and allowance of the applicant, for more than two years, and that he had abandoned the same to the public.

3. That the reissued letters patent described in the bill of complaint are void, because they do not contain the limitations and conditions expressed in the extended patent, and were not issued in conformity with the act of Congress passed for the relief of the original patentee.

4. That the respondents' machinery, having been in use before and at the time the patent in this case was granted, is within the saving clause of the proviso in the said act of Congress.

I. Exception might well be taken to the first proposition, upon the ground that it is a departure from the special defense set up in the answer, unless it can be admitted as included in the more general allegation, denying that the assignor of the complainant was the original and first inventor of the improvement described in the patent.

Persons sued as infringers may plead the general issue in suits at law, and may prove, as a defense to the charge, if they have given the plaintiff thirty days' notice of that defense before the trial, that the patentee was not the original and first inventor of the thing patented; but the same section which authorizes such a defense provides that whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, "he shall state in his notice of special matter the names and places of residence of those whom he intends to prove to have

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possessed a prior knowledge of the thing, and where the same had been used." *Wilton v. Railroad*, 1 Wallace, Jr., 195.

Evidence to prove such a defense, in a suit at law, is not admissible without an antecedent compliance with those conditions, and the settled practice in equity is to require the respondent, as a condition precedent to such a defense, to give the complainant substantially the same information in his answer. Unless the practice were so, the complainant would often be surprised, as the rule of law is that the letters patent afford a *prima facie* presumption that the patentee is the original and first inventor of what is therein described as his improvement, and if the respondent should not be required to give notice in the answer that proofs would be offered to overcome that presumption and establish the opposite conclusion, very great injustice might be done, as the complainant might rely upon that presumption and fail to take any countervailing proofs. *Teese v. Huntingdon*, 23 Howard, 10.

Better opinion is, that the defense embraced in the first proposition of the respondents is not admissible under that allegation in the answer which denies that the assignor of the complainant was the original and first inventor of the improvement. Such a defense, if recognized at all in this case, must be admitted under that part of the answer which was evidently framed for that special purpose.

Substance and effect of those allegations are, that the respondents deny that the original patentee ever bestowed any ingenuity upon the improvements, and they allege that the same were invented and applied by one Edward Winslow; that the patentee first derived knowledge of the invention from that individual, and that the original patentee fraudulently and surreptitiously obtained the patent for that which he well knew was the invention of his informant.

No exception was taken to the answer in the court below, and in that state of the case the allegations of the answer, that the invention was made by a third person, and not by the assignor of the complainant, may be regarded as a good defense, but it is quite clear that the charge that the original patentee in this case fraudulently and surreptitiously obtained the patent for that which he well knew was invented by another, unaccompanied by the further allegation that the alleged first inventor was at the time using reasonable diligence in adapting and perfecting the invention, is not sufficient to defeat the patent, and constitutes no defense to the charge of infringement. 5 Stat. at Large, 123; *Reed v. Cutter*, 1 Story, 599.

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Viewed in any light, the proposition amounts to the charge that the invention was made by the person therein mentioned, and not by the assignor of the complainant, and the burden to prove it is on the respondents, not only because they make the charge, but because the presumption arising from the letters patent is the other way.

Application for a patent is required to be made to the Commissioner appointed under authority of law, and inasmuch as that officer is empowered to decide upon the merits of the application, his decision in granting the patent is presumed to be correct. *Pitts v. Hall*, 2 Blatchford, 229; *Union Sugar Refinery v. Matthiessen*, 2 Fisher, 600.

Before proceeding to inquire whether or not that defense is sustained by the proofs, it becomes necessary to examine specifications and claims of the patent, and to ascertain, by a comparison of the mechanism therein described, with the antecedent state of the art, the true nature, character, and extent of the improvement.

Sets of carding machines, for the production of yarn from wool, were well known, and in use before the invention of the original patentee. They usually consisted, besides the spinning-jenny, of three carding machines, called the first and second breaker, and the finisher, but they could not be used to much practical advantage, in connection with the jenny, without a separate machine, called the billy, for splicing the rolls. Two jennies were often used, instead of one, in that combination, and in some instances, two double carding machines were preferred, instead of three single machines.

Like the still older carding machine, the breaker had what was called a feed-table, and the wool, previously prepared by other means, was placed on that table, and was, by that means, fed to the carding mechanism, and having passed through the carding apparatus to the delivery end of the machine, was stripped from the device called a doffer, and fell to the floor. The device for stripping the filament from the doffer was a comb, which constituted a part of the machine. Second breaker was similar in construction to the first, and the process of feeding and carding was the same, but the filament from the first breaker constituted the material to be used in the second, instead of using wool prepared by hand, or from the picker, and the filament when carded and stripped from the doffer, was wound round a drum. The method of feeding the material into the carding apparatus of the finisher was also the same, but it was provided with an additional apparatus, at the delivery end of the machine, called the roller and shell,

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which formed the material into short rolls. Those rolls were about the length of the card surface of the doffer. They were taken to the billy, and were there spliced by hand, on the apron of that machine, and, as the apron moved forward, they were fed to the spindles, and converted into roving, suitable to be spun into yarn.

Goulding aimed to dispense with the billy altogether, and sought to accomplish, with four machines, what had previously required the use of five; and the evidence shows, beyond controversy, that his invention enabled manufacturers to produce yarn from wool, at much less cost, of better quality, and in greater quantity, than was produced by the old process. His purpose, also, was to dispense with short rolls, and to introduce the long or endless roll in its place. Years were spent by him in experiments to accomplish these purposes, but the result was that he was successful. He dispensed altogether with the billy, and, by a new combination of old devices, he obtained the endless roll, and so perfected his machinery that he could use it successfully, from the moment the roving left the delivery-end of the first breaker, till it was converted into yarn, fit to be manufactured into cloth.

Attempt will not be made to describe the various plans which he formed, nor the experiments which he tried, as it would extend the opinion to an unreasonable length. Under his method, as described, the wool, as it comes from the picker, is placed on the table of the first breaker, and is fed to the carding apparatus as before, but the sheet of carded material, when stripped from the doffer, is taken away on one side of the delivery-end of the machine, by means of two rollers, through a turning-tube, or pipe, to which a slow rotary movement is given by a band passing from a drum, actuated by the machine, and operating upon a pulley affixed to the tube. Description is also given of the means by which the roving or sliver is condensed and wound round the bobbin, and also of the means by which it is retained in the proper position, and made to partake of the rotary movement communicated to the drum. Particular description is also given of the means by which the roving may be evenly wound upon the bobbins, either by carrying it and the drum backward and forward, or by passing it between guides, affixed to a bar, to which a similar movement is communicated.

Next step is, that the bobbins, with the roving thereon, twenty in number at least, are placed in a frame or creel, in order that the roving may be fed to the second carding machine, and guided into it, between certain dividing pins, but it is taken away at the de-

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livery-end, in a single roving, and by the same means as from the first machine.

Principal object in passing the material through the second breaker is, that it may be more completely mixed, so that every part of the roving will be of the same fineness. Third operation is, that the bobbins of roving, as delivered and wound in the second breaker, are placed in a frame or creel, similar to that before described, but each roving is now to be kept separate, and certain blocks are provided for that purpose, made broader in front than behind, so that each roving shall preserve its proper situation, without mingling with those adjacent to it, during the operation of carding, and also that it may finally reach its proper place upon the delivering cards.

The feeding of the material into the carding apparatus of the finisher is accomplished in the same way as before described, but the mechanism for carding, and for delivering the roving, is more complex, and widely different. Two delivering cylinders are constructed, placed one above the other, surrounded with wire card, in strips, with uncovered spaces of equal width, and so arranged that the uncovered spaces on one cylinder shall correspond with the strips of wire card on the other, for carding the separate rovings as they are fed into the carding apparatus. Different mechanism is also provided for removing the carded material from the delivering cylinders, which is accomplished by the rotary action of the tubes upon such material, by which the several filaments, as they are delivered, are formed into a loose continuous roving, which is guided between certain pins, and passed through certain rollers, in order to give the roving a sufficient coherence before it is wound on to the bobbins, to be used in the jenny.

Means for slightly twisting the roving as it leaves the finisher are also described, and the directions are that the guides of the finisher must have a lateral motion backward and forward, so that each roving may be regularly laid side by side, within its own proper limits, and the devices to accomplish that function are fully described. Modifications were also made by the inventor in the devices of the carding apparatus of the finisher, and also in the apparatus for delivering the roving in the third operation, and for winding it on to the bobbins preparatory to their transfer to the jenny where the roving is spun into yarn. Those modifications of old machinery are minutely described in the specification, and it is obvious that they are of great value in accomplishing the final result, and that they constitute some of the main features of the invention.

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Changes were also made in some of the devices of the jenny, and also in their arrangement and mode of operation as compared with prior machines, and those alterations also are so clearly described as to constitute a full compliance with the sixth section of the Patent Act. Substitutes are suggested for many of the described devices, but it is not practicable to enter into those details. Separate parts of the machinery, as used in the several combinations, are not claimed by the patentee. Omitting redundant words the claims of the reissued patent are to the effect following:

First. I claim in combination the following sets of apparatus making up a machine, namely : 1. A bobbin-stand or creel. 2. Bobbins on which roving may be wound. 3. Guides or pins. 4. A carding machine. 5. Condensing and drawing-off apparatus. 6. Winding apparatus, whereby rovings may be fed to a carding machine, carded, condensed, drawn off and wound again in a condensed state, substantially in the manner herein set forth.

Second. I claim the feed rollers of a carding machine, in combination with bobbins and proper stands therefor, and guides or pins whereby slivers or rovings may be fed to be carded by mechanism substantially such as herein described.

Third. I claim a delivering cylinder of a carding machine in combination with apparatus for drawing off, condensing, or twisting and winding carded filaments, by apparatus substantially such as herein described.

Lastly. I claim a mule or spinning-frame, provided with spindles mounted on a carriage, and with jaws or their equivalents for retaining roving in combination with bobbins, whose axes are parallel, or nearly so, with the line of spindles, and rest upon drums revolving to unwind the bobbins substantially as herein set forth.

Careful attention to the description of the invention and the claims of the patent, will enable the parties interested to comprehend the exact nature of the issue involved in the first defense presented by the respondents. Purport of that defense is, that the invention was made by Edward Winslow, and not by the assignor of the complainant. The settled rule of law is, that whoever first perfects a machine is entitled to the patent, and is the real inventor, although others may have previously had the idea and made some experiments towards putting it in practice. He is the inventor and is entitled to the patent who first brought the machine to perfection and made it capable of useful operation. *Washburn et al. v. Gould*, 3 Story, 133.

No one is entitled to a patent for that which he did not invent unless he can show a legal title to the same from the inventor or

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by operation of law; but where a person has discovered an improved principle in a machine, manufacture, or composition of matter, and employs other persons to assist him in carrying out that principle, and they, in the course of experiments arising from that employment, make valuable discoveries ancillary to the plan and preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle, and may be embodied in his patent as a part of his invention.

Suggestions from another, made during the progress of such experiments, in order that they may be sufficient to defeat a patent subsequently issued, must have embraced the plan of the improvement, and must have furnished such information to the person to whom the communication was made that it would have enabled an ordinary mechanic, without the exercise of any ingenuity and special skill on his part, to construct and put the improvement in successful operation.

Persons employed, as much as employers, are entitled to their own independent inventions; but where the employer has conceived the plan of an invention and is engaged in experiments to perfect it, no suggestions from an employee, not amounting to a new method or arrangement, which, in itself, is a complete invention, is sufficient to deprive the employer of the exclusive property in the perfected improvement. But where the suggestions go to make up a complete and perfect machine, embracing the substance of all that is embodied in the patent subsequently issued to the party to whom the suggestions were made, the patent is invalid, because the real invention or discovery belonged to another. *Pitts v. Hall*, 2 Blatchford, 234; *Allen v. Rawson*, 1 Manning, Granger & Scott, 574; *Alden v. Dewey*, 1 Story, 338; 1 Webster's Patent Cases, 132, note e; *Curtis on Patents*, 3 ed. 99; *Reed v. Cutter*, 1 Story, 599.

Guided by these well-established principles, the first inquiry is, what was actually done by the person who, as alleged by the respondents, was the real inventor of what is described in the reissued letters patent? They do not pretend that he invented or even suggested the entire invention, nor all of the several elements embraced in any one of the separate combinations, as expressed in the claims of the patent; and if they did, it could not for a moment be sustained, as it finds no support whatever in the evidence. None of the devices described in the specifications are new, but the claims of the patent are for the several combinations of the described elements arranged in the manner set forth, and for the purpose of working out the described results.

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Regarded in that light, it is clear that the concession that the person named did not invent nor suggest the entire invention, nor any one of the separate combinations, is equivalent to an abandonment of the proposition under consideration, as it is clear to a demonstration that nothing short of that averment can be a valid defense. Respondents do not allege in the answer that the person named was a joint inventor with the original patentee, but the allegation is that he made the invention, and they deny that the assignor of the complainant ever bestowed any ingenuity upon what is described in the letters patent as his improvement. Such a defense cannot be successful unless it is proved, as common justice would forbid that any partial aid rendered under such circumstances, during the progress of experiments in perfecting the improvement, should enable the person rendering the aid to appropriate to himself the entire result of the ingenuity and toil of the originator, or put it in the power of any subsequent infringer to defeat the patent under the plea that the invention was made by the assistant and not by the originator of the plan.

The evidence shows that the original patentee was born in 1793, and that he commenced working on machinery in his youth, while he was with his father, and that, as early as the year 1812, he went into the employment of certain machinists, residing at Worcester, Massachusetts, who were engaged in constructing machinery for the manufacture of wool and cotton. While in their employment, he began experiments in woolen machinery. Those experiments were directed to the object of improving the billy, for the purpose of drawing out the carriage more accurately, and thereby making better work. Several years were spent in that business, but, in 1820, he went to Halifax, in that State, and, while there, he made numerous experiments to get rid of the billy entirely, and to dispense with short rolls, and substitute long rolls in their place. He remained there three years, and, during that time, he was constantly engaged in experiments to accomplish those objects. In the spring of 1823 he moved to Dedham, in the same State, and there hired a mill, and engaged in the manufacture of broadcloth, and also carried on the machine business, and the witness also states that he then prosecuted his experiments on a large scale.

Cans were used as a receptacle for the rovings, delivered from the doffers, before the drawing-off and winding apparatus, described in the patent, was invented. Rovings, before that invention, were spun from cans, instead of being wound upon, and spun from, spools or bobbins. Considerable importance is attached to the new method, as it was largely by that means that the use of the endless

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roving was made practical, and that the difficulty produced by the kinking of the roving, incident to the use of the cans, was overcome.

Theory of the respondents is, that the new method of accomplishing that function was invented by Edward Winslow, but their witness, John D. Cooper, only testifies that he made or suggested the spool and drum, which are not the only elements of that apparatus. Unaccompanied by the traverser, they would, perhaps, be better than the cans, but it is clear that the apparatus would be incomplete without that device, as it is by that means that the bobbins are evenly wound with the roving.

Testimony of that witness is, that he first suggested to Winslow that the roving must be wound on a spool, else they never could make good yarn, and he proceeds to state that they procured some pasteboard, and that Winslow made a pattern for a spool and drum from that material. Explanations, in detail, are given by the witness, of the several steps taken by them in accomplishing the change in the apparatus, and the witness states that the original patentee never saw the spool and drum until he came into the mill and saw those devices in the machine. Argument for the respondents is, that the spool and drum were invented by that party while he was in the employment of the original patentee, but the complainant denies the theory of fact involved in the proposition, and insists that the statements of the witness are untrue, and that he is not entitled to credit. Further statement of the witness is, that the improvement, as soon as it was perfected, was applied to all the carding and spinning machines in the mill, and that the mills, so adjusted as to embrace that improvement, were put in successful operation during the summer and autumn of that year.

Two answers are made by the complainant to the defense founded on that testimony, both of which are sustained by the court: 1. Suppose the testimony of the witness to be all true, the complainant contends that it is not sufficiently comprehensive to support the allegations of the answer, nor even to support the proposition presented in the brief of the respondents. Taken in the strongest view for the respondents, the testimony merely shows that Winslow, or the witness Cooper, or both together, after the originator of the plan had nearly completed his great and valuable improvement, and while he was still prosecuting his experiments with the utmost diligence, suggested the spool and drum as substitutes for the cans, and that Winslow actually made those devices, and, with the aid of witness, put them into one of the machines as

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an experiment. When their employer first examined the arrangement, rude as it was, he expressed great satisfaction with it, but upon seeing it tried he pronounced it of no value. Neither of those opinions, however, turned out to be quite correct, as, upon further trial, when better adjusted, and by adding the traverser, so that the contrivance would wind the roving evenly on the spool, it proved to be a useful auxiliary part of the invention.

Valuable though it was and is, as aiding in the accomplishment of the desired result, it is nevertheless a great error to regard it as the invention described in the subsequent patent, or as such a material part of the same that it confers any right upon the party who made the suggestion to claim to be the inventor, or a joint inventor, of the improvement, or to suppose that the proof of what was done by that party can constitute any defense, as against the owner of the patent, to the charge of infringement.

Second answer to the defense founded on that testimony is, that the testimony is unreliable, because the witness is not entitled to credit. Hundreds of pages of the transcript are filled with proof, introduced either to assail or support the credit of that witness; but the court is of the opinion that it is not necessary to enter into those details, as the decision must be in favor of the appellee, even if every word stated by that witness is taken to be true. Entirely satisfied with our conclusion upon the merits, we are the less inclined to enter into those details, as a full analysis of the proofs within reasonable limits would be impracticable; but it is proper to say that the proofs have been carefully examined, and it is the opinion of the court that the letters patent in this case cannot be held to be invalid upon such testimony.

II. Second defense, as stated in the argument, is, that the invention, at the time the application for the original patent was made, had been on sale and in public use, with the consent and allowance of the applicant, for more than two years, and that the applicant abandoned the same to the public. Abandonment, as set up in the concluding paragraph of the proposition, is a distinct defense from that set up in the preceding part of the same proposition, and must be separately considered.

Sale and public use, for more than two years prior to the application for the patent, are not alleged in the answer. What the respondents do allege is, that the invention, at the time the application for a patent was filed, and for a long time before, had been on sale and in public use, which, without more, is not a good defense against the charge of infringement. On the contrary, the correct rule is that no patent shall be held to be invalid on

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account of such sale and public use, except on proof that the invention was on sale and in public use more than two years before the application therefor was filed in the Patent Office. 5 Stat. at Large, 354; *McClurg v. Kingsland*, 1 Howard, 209; *Stimpson v. Railroad*, 4 Id., 380.

Evidence to show that the invention of the original patentee, as finally perfected, was on sale and in public use more than two years before he applied for a patent is entirely wanting, and if such evidence was offered, it could not be admitted under the pleadings, as no such defense is set up in the answer. *Foster v. Goddard*, 1 Black, 518.

Undoubtedly an inventor may abandon his invention, and surrender or dedicate it to the public; but mere forbearance to apply for a patent during the progress of experiments, and until the party has perfected his invention and tested its value by actual practice, affords no just grounds for any such presumption. *Kendall et al. v. Winsor*, 21 Howard, 322; *Pennock et al. v. Dialogue*, 2 Peters, 1.

Application for a patent in this case was probably filed in the Patent Office before the middle of November, 1826, and the proofs are full and satisfactory to the court that the inventor, up to that time, was constantly engaged in perfecting his improvements, and in making the necessary preparations to apply for a patent.

III. Third defense is, that the reissued letters patent are void, because they were not issued in conformity with the act of Congress relating to that subject. Omission of the original patentee seasonably to apply for an extension of his patent was occasioned through erroneous information given to him by the Commissioner, and not from any negligence or fault of his own. Acting upon information from that source, the inventor did not file his application until it was too late to give the notices as required by law, and the time for presenting such an application having expired, the Commissioner had no power to grant his request. Deprived of any legal remedy under the general laws for the protection of inventors, he applied to Congress, and on the thirtieth of May, 1862, Congress passed an act for his relief. 12 Stat. at Large. 904.

By the terms of that act he was authorized to apply to the Commissioner for a renewal and extension of the letters patent, previously granted to him for the term of seven years from the time of such renewal and extension, and the Commissioner was empowered to grant such renewal and extension, or to withhold the same under the then existing laws, in the same manner as if the application therefor had been seasonably made. Annexed to the body of

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the act is a proviso, that such renewal and extension shall not have the effect or be construed to restrain persons using the invention, at the time of such renewal and extension, from continuing the use of the same, nor to subject them to any claim or damage for having used such machinery.

Objection now taken is, that the said proviso in the act of Congress is not recited in the reissued letters patent; but the objection is entirely without merit, as it appears in the record that the certificate of renewal and extension, as granted by the Commissioner, was made subject in express terms to the proviso contained in that act.

Doubts are entertained whether even that was absolutely necessary; but it is clear that there is nothing in the proviso to warrant the conclusion that the form of the extended patent might not be the same as that in general use, and it is not even suggested that the form of the extended or reissued patent was in any respect different from the corresponding established forms of the Patent Office.

IV. Fourth defense is, that the respondent's machinery was in use before the patent in this case was granted; but it is not alleged that their machinery was in use before the extended patent was issued, and therefore the allegation affords no defense to the charge of infringement. *Stimpson v. Railroad*, 4 Howard, 380.

Other defenses are mentioned in the brief of the respondents; but none of them were urged in argument, and they must be considered as abandoned.

V. Infringement is an affirmative allegation made by the complainant, and the burden of proving it is upon him, unless it is admitted in the answer. Specific inquiries were made of the respondents in this case, and they did not satisfactorily answer those interrogatories. Evasive answers, under such circumstances, if not positively equivalent to admissions, afford strong presumptive evidence against the respondents. Apart from that, however, the answer of the respondents is unsatisfactory in other respects. They do not in terms deny that they have used, and are using, the invention as alleged; but what they do deny is, that they use any machinery in violation and infringement of any rights of the complainant, or that they are using, or have made, used, or sold, any machinery not protected by the proviso contained in the act of Congress passed for the relief of the original patentee.

Clear implication from the answer is, that they had made machinery such as that described in the letters patent, and if so, then they are clearly liable as infringers, as they were not incorporated at the date of the extended patent. Machines made since the pat-

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ent was extended are not protected by that proviso, as is plain from its language; but the complainant cannot recover damages for any infringement antecedent to the date of the reissued patent, as the extended patent was surrendered.

Proofs of the complainant to show infringement consist in a comparison of the machines made by the respondents with the mechanism described in the patent, and in the testimony of scientific experts, and they are so entirely satisfactory, that it is not deemed necessary to pursue the investigation.

DECREE AFFIRMED.

WHITELY v. SWAYNE.

(7 Wallace, 685.)

1. Where a patent has been granted for improvements, which, after a full and fair trial, resulted in unsuccessful experiments, and have been finally abandoned, if any other person takes up the subject of the improvements, and is successful, he is entitled to the merit of them as an original inventor.
2. He is the first inventor, and entitled to the patent, who, being an original discoverer, has first *perfected and adapted* the invention to actual use.

WHITELY filed a bill against Swayne, in the Circuit Court for Southern Ohio, to enjoin the use of a certain machine known as the Kirby harvester.

As the case was presented in the argument, he relied upon a patent granted to one Steadman, May 23, 1854, for an improvement in clover and grass-seed harvesters, which had been assigned to him, (Whitely,) and surrendered, and three reissues granted to him on the 19th June, 1860.

The machine complained of, and sought to be enjoined, had been originally patented to one Byron Dinsmore. Dinsmore's specifications were sworn to, December 31st, 1850, and was received at the Patent Office, January 10th, 1851. His patent was issued February 10th, 1852. He made and tried one of his machines in 1850, and cut some ten or twenty acres with it. In 1851 he made twenty-one of them, and between fifty and sixty of them in the following year. On the 18th of April, 1852, three months after the date of Dinsmore's patent, Steadman filed a caveat in the Patent Office, in which he stated that he was engaged in making experiments for perfecting certain improvements in a machine for harvesting clover and grass-seed, preparatory to letters patent therefor. As already stated, this patent was granted May 23, 1854. Besides the caveat and the patent, there was an account,

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given in the testimony, of the working of the machine, by Mr. Hatch, a neighbor of Steadman's, who resided in Holley, Orleans county, New York, in 1854. The machine was tried in the neighborhood on several occasions in clover fields, but never went into successful practical operation. No machines were ever made under the patent after the first, which was about the time the patent was granted. The experiment appeared to have been wholly given up and abandoned by Steadman as a failure; and it thus remained for some six years, when the complainant (Whitely) took from him an assignment of the patent, and procured the three reissues already referred to.

The bill was dismissed by the court below, and the complainant brought the case here.

Mr. Fisher, for the appellant.

Mr. Wright, contra.

Mr. Justice NELSON delivered the opinion of the court.

The plaintiff's title, and the one upon which he must succeed against the defendant, if he succeeds at all, rests upon a patent for improvements in a machine for harvesting clover and grass-seed; which improvements, after a full and fair trial, resulted in unsuccessful experiments, and which were finally abandoned. They never went into any useful or practical operation, and nothing more was heard of them from Steadman or any other person, for a period of six years. At the end of this period the plaintiff takes an assignment of the patentee, and is, doubtless, vested with all his rights. But what were those rights? Clearly, if any other person had chosen to take up the subject of the improvements, where it was left off by Steadman, he had a right thus to enter upon it, and if successful, would be entitled to the merit of them as an original inventor, for he is the first inventor, and entitled to the patent, who, being an original discoverer, has first perfected and adapted the invention to actual use. *Curtis on Patents*, § 43, p. 37, and notes.

Hence, if Dinsmore's patent was later than that of Steadman, and was for similar improvements, it would constitute a perfect defense against the suit in the present case, as the plaintiff is obliged to rely wholly on this assignment of Steadman, and stands in his footsteps, and has no better title. But the fact is otherwise. Dinsmore's invention goes back to the year 1850. His first machine was successfully tried in the harvest of that year. Some twenty-one were made in the year 1851, and from fifty to sixty in

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ISSUE. Steedman's caveat was even not filed in the Patent Office till after Dinsmore's patent was issued. The present defendant derives his title from Dinsmore. The case is too plain to require any extended examination.

DECREE AFFIRMED.

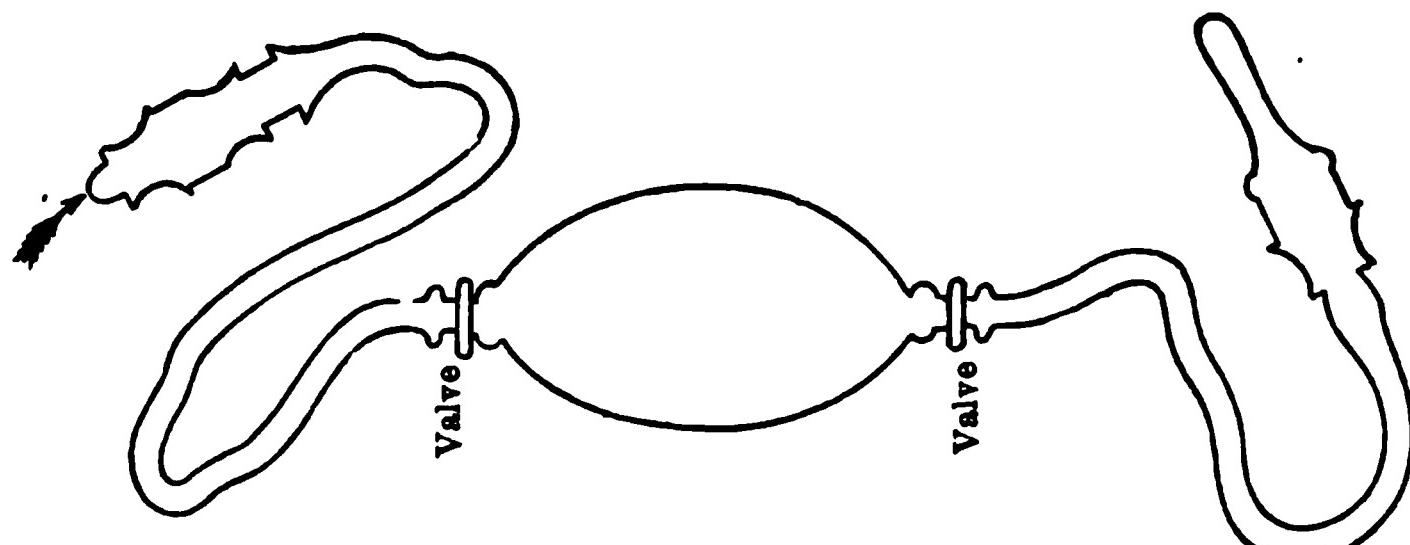
MOREY v. LOCKWOOD.

(8 Wallace, 230.)

1. Where a limitation of a claim, as found in a patent, has been caused by a mistake of the Commissioner of Patents in supposing that prior inventions would be covered, if the claim was made, as the applicant makes it, more broad, and an inventor has thus been made to take a patent with a claim narrower than his invention, it is the right, and, as it would seem, the duty of the Commissioner, upon being satisfied of his mistake, as to the nature of the prior inventions, to grant a reissue with an amended specification and a broader claim.
2. Where the amended specifications and broader claim secures the patentee only the same invention that he had originally described and claimed, the reissue is valid.
3. The syringe known as the Richardson syringe is an infringement of a patent for a syringe, granted March 31st, 1857, to C. & H. Davidson, and reissued April 25th, 1865, with an amended specification.
4. The Davidsons were the original and first inventors of the syringe patented by the patent and reissue above referred to.

APPEAL from the Circuit Court for the District of Massachusetts.

Lockwood, assignee of the inventors, filed a bill in the court just named to restrain Morey and others from infringing letters patent granted to Charles H. and Herman E. Davidson, on the 31st of March, 1857, for a new and useful improved syringe; and which were surrendered and reissued on the 25th day of April, 1865, with an amended specification. The diagram below presents a sectional view of the instrument; now commonly called

THE DAVIDSON SYRINGE.

The case was this:

Prior to the date, when, by the inventions of Goodyear, India-

Statement of the case.

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rubber had become so important an agent in surgical operations, the only syringe in much use was the old metallic syringe, with a plunger, sometimes known as the pump syringe. The objections to the use of it, whether anal or vaginal, were, amongst others, that it required to be worked, if the party was at all feeble, by a second person, that it required the patient to be moved and placed in certain positions before it could be used, thus sometimes causing a strain; that where the parts were delicate or diseased, it was liable, even when thus used, by slipping or accidental motion, to injure them; and finally, that unless the instrument was large, when the inconvenience of it was proportionally increased, it required, in many cases, however used, to be removed, refilled, and replaced before a sufficient injection could be obtained. With the discoveries in manufacturing India-rubber, three improved forms of the instrument were made.

1. The globe syringe, composed of a simple globe or bulb of India-rubber with an inflexible pipe inserted in it. By compressing the bulb, the air was expelled and a vacuum caused. The pipe being then placed in any fluid, it flowed by the weight of the external atmosphere into the globe, from which, on the extremity of the pipe being inserted into the part to which it was designed to convey it, the fluid passed on compression of the globe by the hand. One objection, among others, to this instrument was, that it had to be removed, refilled, and replaced, if the injection required was large. The desideratum remained of a syringe which could supply itself, and which, avoiding any strain upon the patient's body, would hold the enema steadily and close to it.

In this condition of the art, so far, apparently, as was known to him, Herman E. Davidson, a physician, resident in Gloucester, Massachusetts, had been attending, prior to August, 1852, a patient, suffering from uterine cancer, and who used a globe syringe, with a rubber bulb and a single inflexible tube. Observing the inconvenience and discomfort to the patient of having to remove this instrument from the body, from time to time, in order to refill the instrument with the enema, Dr. Davidson suggested to a brother of his, Charles H. Davidson, who was a machinist, the making of a syringe which could supply itself with enema without being so removed.

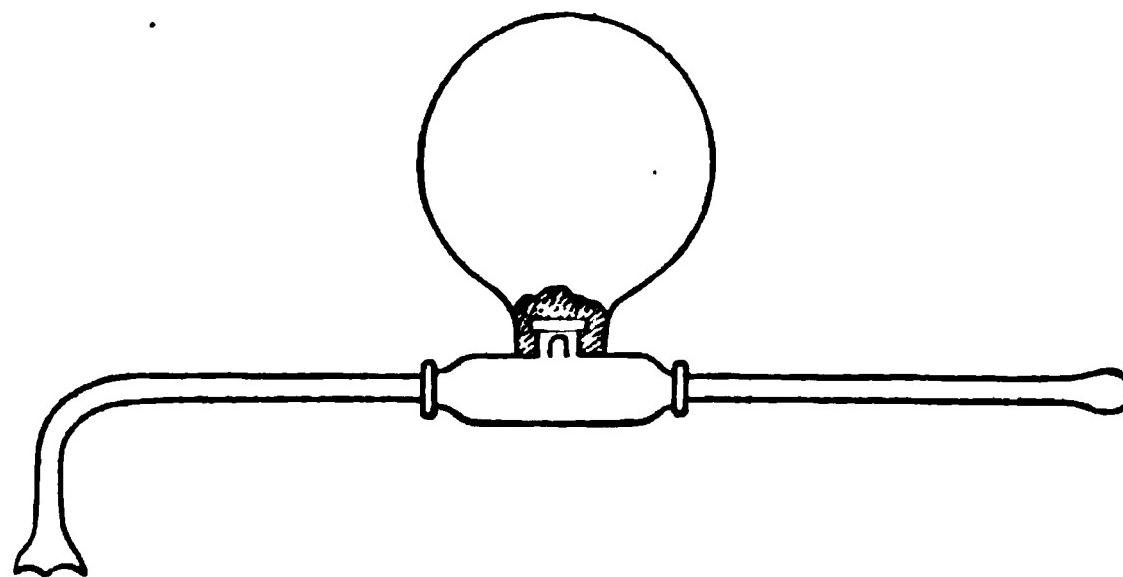
Thereupon, Charles Davidson devised and made a drawing of a syringe, in which the elastic sac had but one opening, the two flexible tubes being coupled to it at that point, the enema entering the sac through one tube and being expelled through the other; a "single-neck" syringe, and having a "three-way connection."

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The bulb was more round than oval—nearly spherical—being the shape of the bulb in the syringe which the patient was then using. Dr. Davidson suggested the use of the oval form of bulb, and also, as a simpler and better mode of combining the parts, to have the two flexible tubes enter the sac at opposite sides.

In the early part of January, 1853, the Davidsons filed a caveat in the Patent Office, announcing that they had made certain improvements in syringes, and that they were now perfecting them prior to an application for a patent; their petition, together with the accompanying description, being dated on the 8th of January in that year. In that description, the petitioners state that their improvement consisted in using a spheroidal, cylindrical, or globular elastic sac or bulb, to which were attached, and communicating with it, flexible tubes or pipes; to the ends of which pipes were connected valve-boxes, with suitable valves therein, so that by the alternate action of compression and expansion, the desirable quantity of injection might be administered without removing the instrument to refill it.

When application was made by the attorney of the inventors to the Commissioner of Patents, with a claim for the combination of an elastic sac, with flexible tubes, terminated with suitable valve cases and valves, the whole operating together in the manner and for the purpose set forth, objection was made by the office, on the ground that they were anticipated by Messrs. Pearsall & Gilbert, who, according to an account published in the Franklin Journal, had already improved syringes by making a rubber sac with two tubes coupled to it at one point. The diagram which the Franklin Journal presented was thus:



And the Commissioner refused to grant the patent, except with a claim, thus—the clause in italics, “when the sac, tubes, and valve-boxes are in, or nearly in, the axial line,” being particularly insisted on :

“What we claim as new, and desire to secure, &c., is the com-

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bination of the prolate spheroidal shaped elastic sac with flexible tubes, terminating in valve-boxes, containing valves, arranged for the purpose of eduction and ejection, *when the sac tubes and valve-boxes are in or nearly in the same axial line*, the whole operating together substantially in the manner and for the purpose set forth."

The specification in this form was supposed to have taken the improvement out of the objection of the prior one by Pearsall & Gilbert.

In May, 1856, the Davidsons acquiesced in the rejection, and submitting an amendment and restricted claim, the patent was granted.

The original specification described the improvement, in substance—

"To consist of an oval or spheroidal elastic bulb, with flexible tubes and metallic valve-boxes, containing valves arranged for the purpose of eduction and ejection, when the elastic tubes and metallic valve-boxes were attached to such an elastic bulb in or nearly in its greatest axial line. The bulb and flexible tubes are composed of India-rubber, or of any suitable material of sufficient elasticity and flexibility, as is necessary, and required by the patentee in the use or operation of the instrument."

The specimens exhibited were all made of India-rubber.

The mode of operation of the instrument was described as follows:

"Immerse the end of the eduction pipe in the enema, compress the bulb with the hand, which will expel the air from within, then releasing the grasp, the bulb will recover its form by means of its elasticity, and the partial vacuum will be filled with the enema; then insert the injection pipe, and repeat the operation of compressing the bulb until the required quantity of the enema is administered."

Having described the invention, what the inventors claimed as new, were the matters already mentioned as the ones thought proper by the Commissioner to be so claimed, to wit:

"The combination of the prolate spheroidal-shaped elastic sac, with flexible tubes, terminating in valve-boxes containing valves, arranged for the purpose of eduction and ejection, when the sac, tubes, and valve-boxes are in, or nearly in, the axial line, the whole operating together, substantially in the manner and for the purposes set forth."

Subsequently to this grant of this patent, it was discovered by the patentees, or their assignee, and also by the Commissioner

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himself, that the invention of Messrs. Pearsall & Gilbert furnished no legal objection to the claim of the Davidsons, as first presented to the office; for, although the prior improvement had a rubber sac, the tubes were *metal and inflexible*. Accordingly, on a surrender by the assignee he was allowed to amend the claim by restoring it to its original form, and the office granted a reissue with the claim in that form.

The amended specification was substantially the same as the original, leaving out that part which described the bulb or sac, tubes, and valve-boxes attached and so arranged as to be "in, or nearly in, its greatest axial line." As respected the claim, it was as follows:

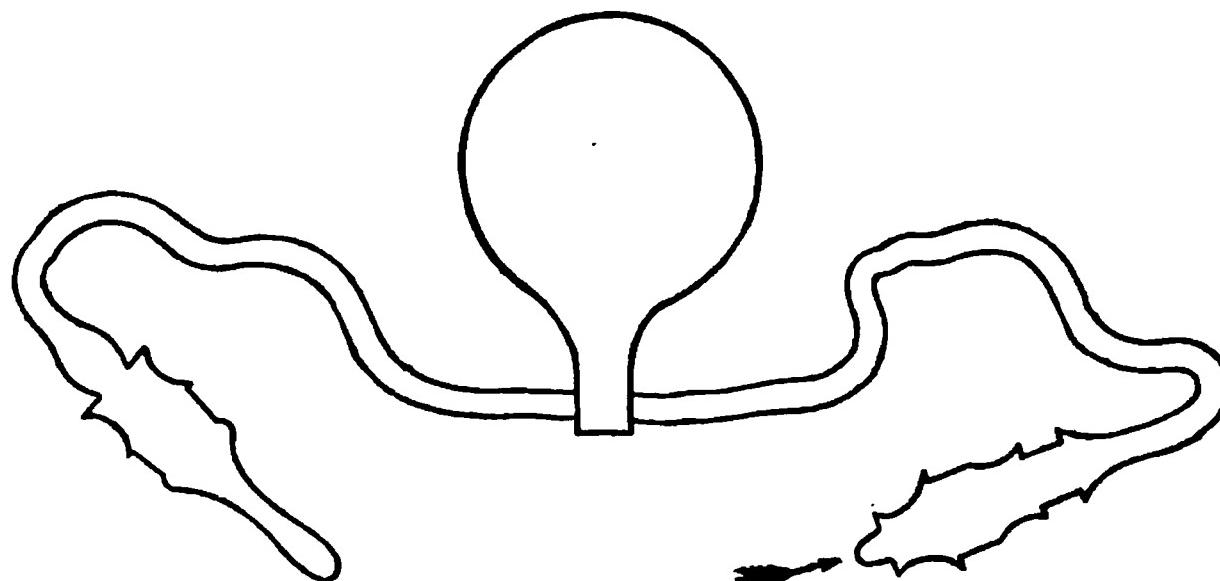
"What is claimed as the invention of Charles H. and Herman E. Davidson, is a syringe, having an elastic bulb or chamber, flexible tubes, and a suitable valvular arrangement, when organized, so as to operate substantially as described."

This claim, it will be observed, is the same with the one in substance made by the Davidsons, and refused by the Commissioner when the patent was applied for.

By the 13th section of the Patent Act of 1836 a surrender and an amended specification may be made when the patent issued is inoperative, or invalid, by reason of a defective or insufficient description or specification; or, "if the error has, or shall have arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention."

The invention which the bill sought to enjoin was one known as

THE RICHARDSON SYRINGE.



The instrument had the same parts and materials as the one made by the Davidsons; but instead of arranging them in an axial line, the bulb or sac was placed above the point of delivery and discharge of the enema, extending its "single neck," (which was of course hollow,) so that the tubes might connect with each side

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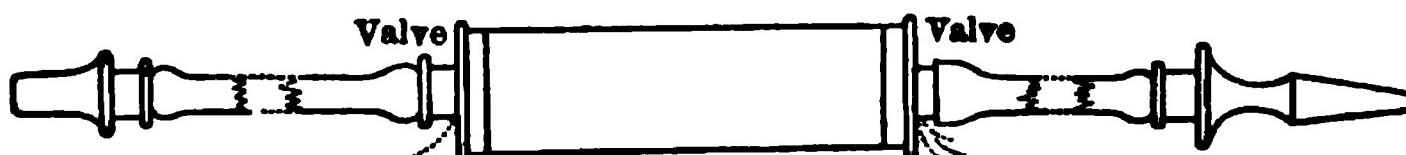
of it. The difference between it and the instrument of the patentee was, that in the latter, in the axial line, tubes connected with the ends of the bulb; in the former they connected, not with the ends of the bulb, but with the sides of its hollow neck. The enema passed from the eduction pipe through the neck or throat into the bulb, and was forced through the discharge pipe by the same means as those used by the patentees.

The chief ground on which the defendants resisted the invention were:

First. That the claim was broader than the invention.

Secondly. No infringement, want of originality, setting up here as the same in principle certain other syringes confessedly of prior date, as:

1. THE MAW SYRINGE.

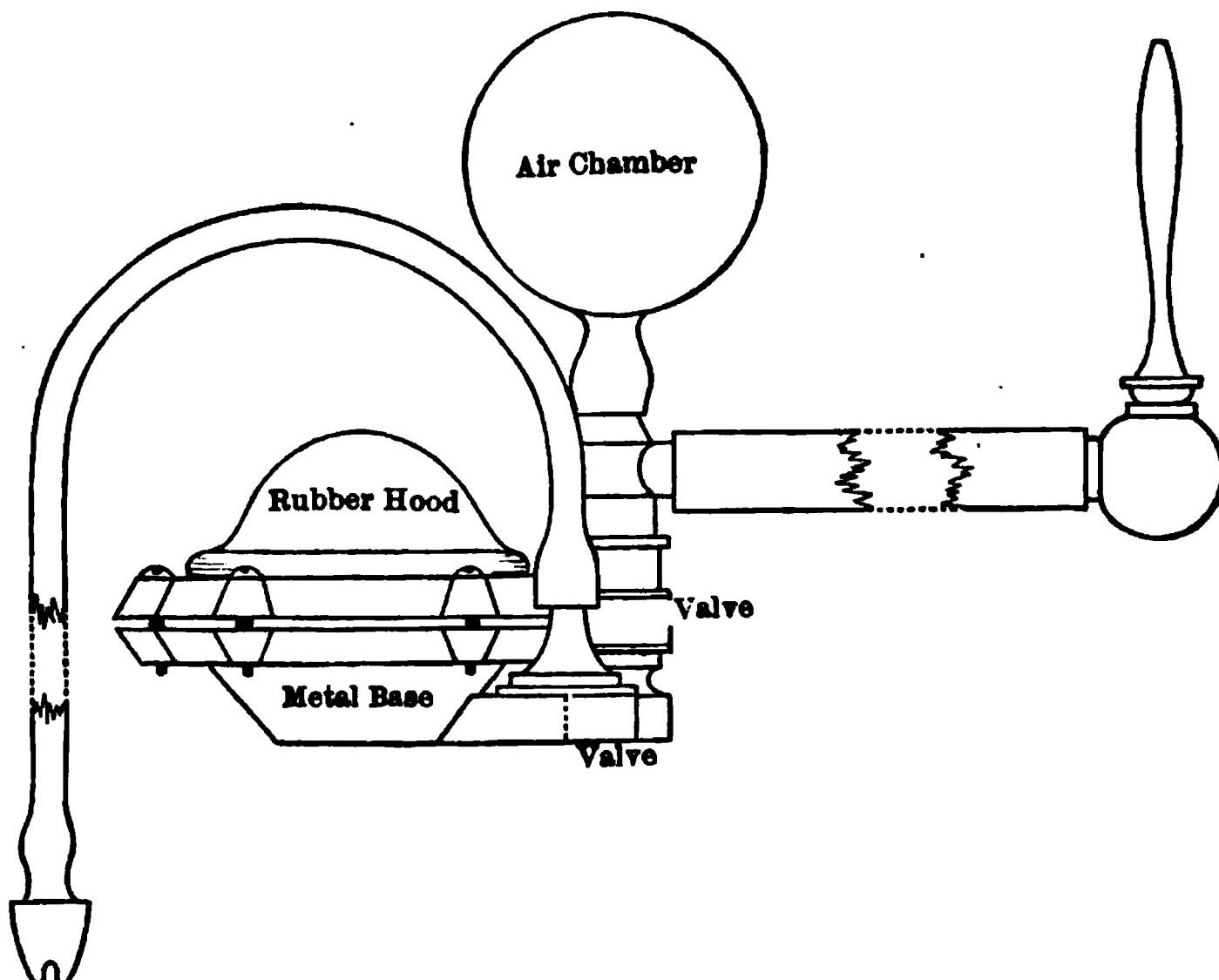


This, it was admitted, was a large step from the globe syringe towards that of Davidson. It was composed of an India-rubber chamber, in form cylindrical, with metallic rims or casings at the ends. From these casings there proceeded a metallic tube of about one-third the diameter of the metallic casings, upon which tubes the inner end of flexible pipes, for eduction and injection, were drawn. Appropriate valves were placed within these small metallic tubes. The mode of using was meant to be the same as in the Davidson syringe. But the difficulty was that the metallic heads, which formed a material part of the inclosure, being rigid, counteracted, by their connection with the elastic part of the chamber, the patient's effort to compress it. Accordingly the patient, if a female, or otherwise feeble, could not well compress it, and even when the party using it was not feeble, the strength required to compress the chamber was so considerable that no one cared to use it. Practically it proved of no value. Very few were ever sold. The Davidson syringe, on the other hand, came into nearly universal use at once.

2. THE THIERS SYRINGE.

This was an instrument of French manufacture. It had two flexible tubes, with suitable valves, but it did not have an elastic bulb or chamber, in form at least, like that shown in the patent. A diagram of it is on page 216.

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1. It was not made of elastic material, but of a metal base plate and a rubber hood set upon it; the rubber hood forming one substantial part of the chamber to be collapsed, and the metal base plate forming the other substantial part thereof.

2. The chamber was not expanded by the elasticity of the material, but by means, wholly or partly, of a metal spring placed within the chamber.

3. The necessary prolongation of the flow of the pressure after the collapsing of the chamber had ceased was accomplished, not by the reaction of the chamber alone, as in the Davidson instrument, but by that *and* an air-chamber acting in connection with it.

These Thiers syringes were imported to and sold in this country in small numbers until about the time of the introduction of the Davidson syringes, and soon after that disappeared from the market.

In addition to these were numerous syringes, known as the Galante, the Phelps, the Johnson, the Hernstein, the Leroy, the Feuchtwanger, and others, some of which had had a certain sale and others none; all were displaced by Davidson's. Much evidence was taken on the one part to show their priority to that of Davidson, and on the other to disprove it; but no priority was sufficiently shown.

The court below decreed an injunction, and from the decree this appeal came.

Argument for the appellants.

Messrs. H. F. French and G. S. Boutwell, for the appellants:

The original patent was neither "inoperative nor invalid," nor was the specification "defective or insufficient." The case, therefore, does not fall within the 13th section of the act of 1836, and the reissue was, therefore, without authority of law. *Burr v. Duryee*, 1 Wallace, 531; *Case v. Brown*, 2 Ib., 320.

The claim in the reissued patent is broader than the invention, and, consequently, is void. If the fair construction of the reissue claim includes any syringe of which the Davidsons were not the original and first inventors, then the claim is broader than the invention, and so is void. Now, a fair construction includes both the Maw and the Thiers syringe; both of them old, known, and used. Can any other construction be supported? By striking out the words "or chamber," and giving a very literal meaning to the word "bulb," we may, indeed, make a distinction. We may say the Maw syringe has everything else, but it has not a bulb. Even this, however, cannot fairly be said of the Thiers syringe, for it has an elastic bulb. But those words cannot be stricken out. The surrender for reissue was for the very purpose of inserting them. The original claim describes a bulb in the words "prolate spheroidal-shaped elastic sac." The word *chamber* was not there. It was not in the caveat, and it was used in the reissued claim with a purpose.

It is, in no sense, a synonym with *bulb*. Every bulb is a chamber, but a chamber is not necessarily a bulb. Chamber is the larger phrase, and may include bulb, but certainly includes *cylinder* as well. Any inclosed space is a chamber. In the Davidson caveat, they describe their sac as spheroidal, *cylindrical*, or globular. The Maw syringe has everything in the Davidson syringe but the bulb. The Davidson syringe, as described in the reissue, includes every element of the Maw, including the chamber, which the Davidsons do not now pretend to have invented.

The syringe made by the appellants is a combination of old parts, substantially different from the Davidson syringe in structure and effect.

1. Our bulb is not their bulb, but different in this, that ours has but one aperture, while theirs has two apertures.
2. The arrangement, or organization, differs in this, that in ours, the fluid in the bulb is above the point of delivery, and we have gravity to aid in expelling it, while in theirs, one half the fluid is below the centre of the bulb.

3. Ours has a three-way piece, not found in theirs, and which cannot be used with theirs.

Argument for the appellee.

4. Ours is so constructed as to receive other pipes for various purposes.

These differences constitute ours a different instrument, different in its combination of parts, and different in its mode of operation; more different from it than theirs was from the Maw. *McCormick v. Talcott*, 20 Howard, 405.

The patent is wholly void, as well for the invention claimed in the original patent, as for the broader claim found in the reissued patent, because syringes containing all that is claimed as the invention of the Davidsons were, long before their alleged invention, known and used in this country.

Messrs. B. R. Curtis and Causten Browne, contra.

1. The limitation of the claim, as found in the patent, in the form in which it is issued, was caused from actual inadvertence and mistake of the Commissioner of Patents. The Davidsons acquiesced from necessity in the Commissioner's decision; but the Patent Office had a right to admit and correct its own blunder, and to grant a reissue with the claim as originally made.

2. The terms bulb, or chamber, are used as synonymous terms. Besides, the argument of the other side assumes that the invention patented embraces any and all elastic chambers, by the intermittent compression and relaxation of which the instrument is made to operate as an injection syringe; whereas it covers only instruments having substantially *such* an elastic chamber as is described.

3. The Richardson syringe is our syringe, under a less useful form. It is, in fact, the form in which Dr. Davidson first invented it, "three-way piece and all," a form abandoned as less simple than the one where the pipes were in an axial line. The gravity of an ounce or two of water is small; of other things sometimes injected less. But, in our form, the benefit of gravity can be obtained by turning the sac up perpendicularly.

4. The Maw syringe had two flexible tubes with suitable valves, and it had *an* elastic chamber, but it did not have an elastic bulb, or chamber substantially like that shown in the patent. We need not examine particularly the construction of the elastic chamber. Whether the difference was theoretically great or small, practically it was a very important one.

The same thing is true of the Thiers syringe, which has marked differences in the construction of the elastic chamber, particularly the metal spring to expand it, and which proved of little practical use.

Opinion of the court.

Mr. Justice NELSON delivered the opinion of the court.

Several objections are taken to this reissued patent; among others, and which is the most material, that the claim is broader than the invention.

The 13th section of the act of 1836 authorizes a surrender, and an amended specification, when the patent issued is inoperative, or invalid, by reason of a defective or insufficient description or specification, or "if the error has or shall have arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention." We do not doubt that the Commissioner had full authority to grant the amendment; and, under the special circumstances of the case, it would seem to have been a duty, as the inventors were led into the error by himself, as may be seen from his letter when the patent was originally granted.

The amendment was very material, as the language of the original claim tied the patentees down to a syringe, consisting of the parts mentioned, to an instrument in which they were arranged in an axial, or straight line; tying them down to the mere form of the construction, regardless of the substance and legal import of the invention. While the original specification and claim remained, it was competent for any one to evade the patent, and enjoy the substance of the improvement by a change in the mere form of the construction—that is, by an arrangement of the several parts in any form, if not in an axial or straight line. And this is what the defendants are endeavoring to accomplish, and would have accomplished if the amendment of the claim had not been allowed.

They have constructed a syringe with the same parts and materials as used by the patentees; but, instead of arranging them in an axial line, the bulb or sac is placed above the point of delivery and discharge of the enema, extending its hollow neck so that the tubes may connect with each side of it. The only difference even in form between this and the patentees' is, that the latter, in the axial line, tubes connect with the ends of the bulb; in the former they connect, not with the ends of the bulb, but with the sides of its hollow neck. The enema passes from the eduction pipe through the neck or throat into the bulb, and is forced through the discharge pipe by the same means as used by the patentees. The mode of operation is precisely the same in both instruments. The change is one of form and not of substance, and, upon well-established principles of patent law, constitutes no defense to a bill for an infringement. Curtis on Patents, 260, 261, and note 2, page 264.

Statement of the case.

As bearing upon this point, it may be stated that the patentees themselves first constructed and used this form of syringe; but, becoming satisfied that the other form was the best, recommended it in their specification accordingly. They are protected, however, against the use of any form, as will be seen by the authorities referred to, that embodies substantially their ideas and mode of operation.

On the question of novelty there are two specimens of syringe produced by the defendants that are chiefly relied on as disproving it: one called the Maw syringe, and the other the Thiers. The first differs from the patentees' in this, that the cylindrical bulb or chamber is made so rigid both in the material and from its metallic ends or heads that it is not sufficiently elastic to be adapted to practical use; and for this reason it failed and went out of the market.

The Thiers syringe differed from the patentees' in this, that part of the bulb or chamber is metal and part rubber; and the elastic portion is aided by a spring inside of the chamber. There is also an air-chamber attached to the delivery pipe. The whole construction and arrangement is different from the patentees', as they have dispensed with the metal portion of the bulb, the spring, and the air-chamber, and substituted a simple India-rubber bulb.

The rest of the proof on this point is conflicting, and we agree with the court below, that the weight of it is decidedly with the complainant.

DECREE AFFIRMED.

WOOD-PAPER COMPANY v. HEFT.

(4 Wallace, 333.)

1. An appeal upon a bill for the infringement of a patent dismissed, it appearing that after the appeal the appellants had purchased a certain patent to the defendants, under which the defendants sought to protect themselves; and that the defendants as compensation had taken stock in the company which had unsuccessfully sought to enjoin them, and was now appellant in the case.
2. The fact that *damages* for the infringement alleged in the bill had not been compromised, held not to affect the propriety of the dismissal.

On motion to dismiss an appeal from the Circuit Court for the Eastern District of Pennsylvania. The case was thus:

In August, 1865, the American Wood-paper Company filed a bill in the court below to enjoin Heft, Dixon, and other defendants against infringing certain patents owned by the company for improvements in paper-making; these patents, including one to Watt

Statement of the case.

& Burgess, granted on the 2d July, 1854, the other to M. A. Miller, on the 26th May, 1857.

The answer of the defendants set up, among other defenses: 1st. The want of novelty; and, 2d, that they manufactured paper under inventions and patents of Dixon, one of the defendants. Proofs were taken on both sides, and, after the hearing of counsel on the 22d November, 1867, the bill was dismissed; and the case was subsequently brought here by appeal.

Pending this appeal, one Meach asked leave to intervene by counsel, upon an allegation that, since the decree below, the case had been settled, and that it was now carried on without the appellees having any further interest in the defense, and for the purpose of obtaining the decree of this court in favor of the complainants to influence suits pending in the circuits in their favor and against strangers to this suit, and in which the same questions are involved; and that the intervenor was a defendant in one of these suits. The application of Meach being allowed, a commission issued to take proofs in the matter, and these being before the court, the motion to dismiss came on to be heard. It appeared, as this court assumed, from the proofs under the commission, that at the time when the original bill was filed, to wit, in August, 1865, the Dixon patents, which were set up as one of the defenses to the suit, were owned, two-thirds by one Harding and one-third by Dixon, the inventor; the two-thirds having been conveyed in December, 1864, the co-defendants of Dixon having no interest therein, except working under them in the manufacture of paper. It further appeared that in the autumn of 1868, about one year after the decree dismissing the bill, Harding and Dixon sold and transferred all their interest in the Dixon patents to the complainants, and received for the same eighteen hundred shares of the stock of their company at par value, which was \$100 per share, nominally \$180,000, and this for one-half the interest in the patents; for the other half the complainants confirmed the licenses that had been granted under the Dixon patents.

This was the account of the sale given by Dixon, who was examined as a witness under the commission. One Hay, the general agent of the complainants, testified that the purchase was made with Harding, and that stock to the amount of two thousand shares was given, and that two certificates with blank vouchers of attorney were made out, and delivered to Harding, one for eighteen hundred, and the other for two hundred shares. Dixon stated that Harding transacted the business with the complainants for him, and with his concurrence.

Opinion of the court.

The evidence, it should be added, tended to show that Dixon had agreed to keep Heft and the other defendants harmless.

Mr. B. F. Butler, in support of the motion, argued that on the case presented the appellant had become the sole party in interest; that the controversy was thus a fictitious one; and on the authority of both English and American precedents ought to be dismissed. *Hoskins v. Lord Berkeley*, 4 Term, 402; *In the matter of R. J. Elsam*, 3 Barnewall & Cresswell, 597; *Fletcher v. Peck*, 6 Cranch, 147-8; *Lord v. Veazie*, 8 Howard, 251; *Cleveland v. Chamberlain*, 1 Black, 425.

Mr. Jenckes, contra, contended that the evidence rightly viewed did not present such a case as opposite counsel assumed from it; that a fictitious case was not to be supposed, but, on the contrary, required clear proof; and that, even if now late in the controversy, the appellant had, without the knowledge of counsel, become the *dominus litis* on both sides, still that the question of damages for infringement on the bill remained to be adjusted, and that this required a settlement of the merits as they originally stood.

Mr. Justice NELSON delivered the opinion of the court.

The case, as it now stands, is this: The complainants having purchased in the patents under which the suit was defended, own both sides of the subject-matter of this litigation; and, further, the owners of the Dixon patents having taken, in consideration for the sale, stock in the complainants' company, their interest has been transferred to the side of the complainants.

It is said, notwithstanding all these negotiations, exchanges, and transfers, the *damages* for the alleged infringement in the bill have not been compromised. But, before that question can be reached, as the bill was dismissed below, this court must hear and determine the question on the merits, whether or not the defenses set up in the answer are sustained upon the proofs. If the court should determine they were not, then the question of damages would arise; if otherwise, not. Now, upon this question of merits, the complainants own both sides of the litigation, and control them; and, in the language of the Chief Justice, in the case of *Lord v. Veazie*, 8 Howard, 255, "the plaintiff and defendant have the same interest, and that interest adverse, and in conflict with the interest of third persons, whose rights would be seriously affected, if the question of law was decided in the manner that both parties to this suit desire it to be." And, for this reason, the case should not be heard by this court.

Statement of the case.

If anything further was necessary to show that the litigation is no longer a real one, even if the suit should proceed, and the question of damages be reached, there would be the same interest on both sides, Dixon, one of the defendants, since the sale of his patents, having a large interest on the side of the complainants, and, as defendant, would be subject to his payment of part, or the whole amount, of the damages recovered. Indeed, the weight of the proofs is, that he has bound himself to keep his co-defendants harmless.

The motion to dismiss the case, for the reasons above given, must be

GRANTED.

BLANCHARD v. PUTNAM.

(8 Wallace, 420.)

1. Where, in a suit at law for infringement of a patent, witnesses testify to previous invention, knowledge, or use of the thing patented, the judgment will be reversed unless an antecedent compliance with the requirements of the 15th section of the Patent Act, requiring in the notice of special matter the names and places of residence of those whom the defendant intends to prove possessed prior knowledge, and where the same had been used, appear in the record. And this, although no reversal for this cause have been asked by counsel, but the case have been argued wholly on other grounds.
2. *Semblé*, That the only proper comparison on a question of infringement, is of the defendant's machine with that of the plaintiffs, as described in the pleadings; and that it is no answer to the cause of action to plead or prove that the defendant is the licensee of the owner of another patent, and that his machine is constructed in accordance with that patent.

ERROR to the Circuit Court for the Southern District of Ohio, the case being thus:

The 15th section of the Patent Act enacts, that whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, "he shall state in his notice of special matter, the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used," and if he does not comply with that requirement no such evidence can be received under the general issue.

With this statute in force, Alonzo Blanchard and others, being owners by assignment of a patent for an improvement in bending wood, granted to Thomas Blanchard, December 18th, 1849, reissued to him November 15th, 1859, and extended for seven years from December 18th, 1863, brought suit at law against Putnam

Argument for the plaintiff in error.

and others for infringement. The defendants pleaded the general issue, but so far as the transcript of the general record showed, gave no notice of any special defense.

On the trial, the plaintiffs gave in evidence the original patent, the reissue, the certificate of renewal and extension, the assignment, and facts tending to prove the alleged infringement, and rested.

The defendants, who were licensees under a patent granted March 11th, 1856, and reissued May 22d, 1862, to one Morris, for an improvement in wood-bending machines, offered in evidence the reissue.

The plaintiff objected to the admission of that evidence, but the court overruling the objection, admitted it, and the plaintiff excepted.

The defendants called as a witness one W. Mitchell, and offered to prove by him, that in A. D. 1858, he saw in use at a factory of one Andrews, in Grand Detour, in the State of Illinois, a machine for bending plough-handles, similar to a model then shown to the witness, and asserted by the defendants to be the same in its mode of operation as the plaintiff's patented machine; the defendants' counsel promising thereafter to connect the said evidence with other testimony, showing such a machine to have been in public use anterior to Blanchard's said invention. To "which evidence," said the bill of exceptions, "the plaintiff objected as not competent or proper." But the court overruled said objection and admitted the evidence. Other testimony was introduced by the defendants tending to prove that the machine described by the witness, or others like it, were in public use at that place before the date of the invention claimed and owned by the plaintiffs.

The court charged the jury at length. It told them that the defenses to the action were:

- 1st. That the Blanchard machine was void for want of novelty.
- 2d. That the machine constructed under Morris's patent did not infringe.

On the first defense, while stating that it was not the intention of the court to go into an analysis of the testimony on the question of anticipation, the learned judge, nevertheless, enumerated the machines set up as prior inventions, leaving it for the jury to pass on the question of novelty, or the want of it.

The case was now here on exceptions.

Mr. G. M. Lee, by brief, for the plaintiff in error, observed that the machine of the defendants, in appearance, was somewhat unlike that patented by Blanchard, and that the defendants assert

Argument for the defendant in error.

that it worked on a different principle from Blanchard's; while the plaintiffs assert it to be the same in principle and mode of operation as Blanchard's, and that it is covered by Blanchard's patent and claim; *that the real question was, therefore, what construction should be given to Blanchard's patent;* and that there was little else in the case.

The learned counsel then went into an examination of "what the Blanchard patent and invention was; of its parts and office;" of the "parts and office of Morris's patent and the defendant's machine;" and having shown, as he assumed, the errors of the charge upon a true view of the case, merely glanced at other errors, of these specifying five; the fourth being thus:

"We claim that William Mitchell's evidence was improperly admitted on the promise of defendant's counsel to afterwards so connect it with other evidence as would make it admissible. *There is nothing to show it was ever so connected, and upon its face it was inadmissible.*"

After specifying the five errors, the counsel added, towards the conclusion, that it was not necessary to argue the effect of the defendant's evidence showing the existence of prior machines, though really none of them showed any want of novelty in Blanchard; that this question became immaterial, because the jury were not called to pass upon it; that the court blotted out the question of novelty or state of the art by its charge, and in substance ordered the jury to find for defendants, because Blanchard's patent did not cover the stationary form used by defendants as the court held.

Mr. Fisher, contra, stated that the machine of the plaintiffs was what was known in the art as a "rotating form machine," and the machine of the defendants what was known in the art as the "stationary form of machine," and that the struggle of the parties in the case was upon the question of infringement, and the *issue was finally resolved to the single point*, whether in view of the state of the art, the plaintiffs' patent could be fairly construed to cover machines for bending wood in which stationary forms were employed.

So far as the reporter perceived, the plaintiff in error nowhere alleged nor alluded to, nor asked a reversal for error in receiving evidence of want of novelty, because proper notice in writing had not been given to the plaintiff as required by the 15th section of the Patent Act, quoted at the beginning of the statement of the case.

Opinion of the court.

Mr. Justice CLIFFORD delivered the opinion of the court.

Damages for the infringement of letters patent may be recovered by the patentee, or by his assignee of the whole interest, or by his grantee of the exclusive right within and throughout any specified district, by a suit in equity or by an action on the case, at the election of the holder of the legal title. 5 Stat. at Large, 123, 124.

Letters patent were granted to Thomas Blanchard, December 18th, 1849, for a new and useful improvement in bending wood, for and during the term of fourteen years from that date, but the specification being imperfect, on the fifteenth of November, 1859, he surrendered the patent, and the same was reissued to him, with an amended specification, for the residue of the original term.

Granted for the term of fourteen years only, the patent expired on the seventeenth of December, 1863, but the patentee having failed to obtain from the use and sale of his invention a reasonable remuneration for the time, ingenuity, and expense bestowed upon the same and the introduction thereof into use, the Commissioner of Patents renewed and extended the patent for a term of seven years from and after the expiration of the first term, giving it the same effect as if it had originally been granted for twenty-one years. Subsequent to the extension of the term the patentee deceased, and the patent was reissued to his executrix, from whom the plaintiffs derive title by virtue of an assignment in due form, as is conclusively admitted by the defendants.

Undoubted owners of the title to the patent, the plaintiffs, on the twenty-third of November, 1865, instituted this suit, and the charge is that the defendants, on the second of November of the previous year, and on divers other days and times between that day and the commencement of the suit, infringed the exclusive right to the invention vested in the plaintiffs, by constructing and using ten machines for bending wood in imitation of the plaintiffs' invention, and in violation of the exclusive right secured to them in their letters patent. Process was issued, and being duly served the defendants appeared and pleaded the general issue, and upon that issue, unaccompanied by any notice to the plaintiffs of any special defense, the parties went to trial, and the verdict and judgment were for the defendants.

Exceptions were duly taken by the plaintiffs to certain rulings of the court in admitting evidence offered by the defendants, and to the instructions of the court, as given to the jury, and the only questions presented for decision are such as are involved in the exceptions to those rulings and instructions.

On the trial of the cause the plaintiffs, to sustain the issue on

Opinion of the court.

their part, introduced in evidence the reissued patent on which the suit was founded, together with the original patent and the certificate of renewal and extension; and having proved the assignment and introduced evidence tending to prove that the defendants had infringed the reissued patent, as alleged in the declaration, rested their case.

They might well rest in that state of the case, as the letters patent afforded *prima facie* evidence that the patentee under whom they claimed was the original and first inventor of what is therein described as his improvement, and having introduced evidence tending to show infringement and damage, they were entitled to a verdict unless some evidence was introduced by the defendants to rebut the evidence given to prove infringement, or to establish some valid defense to the cause of action set forth in the declaration.

Influenced doubtless by that view of the case, the defendants offered in evidence the reissued patent granted to one John C. Morris, dated May 27, 1862, as the foundation for the introduction of evidence to show that the machine or machines which they were using were constructed by them under a license from the patentee in that patent, and in accordance with the specification and claims of that patent as reissued. Seasonable objection was made by the plaintiffs to the introduction of that patent, as evidence in the case, but the court overruled the objection and admitted it in evidence, and the plaintiffs excepted.

Such evidence was inadmissible for the purpose for which it was offered, and should have been excluded, as the novelty of the invention was not open, and because it presented on the question of infringement an immaterial issue not involved in the pleadings, and because the evidence was well calculated to mislead the jury by withdrawing their attention from the real subject-matter in controversy. *Corning et al. v. Burden*, 15 Howard, 271.

Apart from the question of damages two issues only were presented by the pleadings, and they were all which are involved in any similar case:

1. Whether the patentee in the patent on which the suit is founded is the original and first inventor of the alleged improvement, which the plaintiffs in this case established as a *prima facie* presumption when they introduced in evidence the letters patent described in the declaration. *Curtis on Patents*, § 118; *Pitts v. Hall*, 2 Blatchford, 229; *Cahoon v. Ring*, 1 Clifford, 625.

2. Whether the machine of the defendants infringes the plain-

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tiffs' machine as described in the specification and claims of their letters patent.

Attempts are often made in the trial of patent cases to introduce such collateral issues on the question of infringement, but they are irregular and cannot be sanctioned, as the only proper comparison, on that issue, is of the defendants' machine with that of the plaintiff, as prescribed in the pleadings. What the jury have to determine is, does the machine of the defendant infringe the machine of the plaintiff; and if it does not, then the defendant is entitled to a verdict; but if it does infringe the plaintiff's machine, then the plaintiff is entitled to his remedy, and it is no answer to the cause of action to plead or prove that the defendant is the licensee of the owner of another patent, and that his machine is constructed in accordance with that patent.

Controversies between litigants in court cannot be completed in that way, nor should the plaintiff be subjected to such outside issues, as he is clearly entitled to a verdict when he has proved that he is the original and first inventor of his improvement, and that the defendant has infringed his patent. *Curtis on Patents*, §§ 350, 353; *Carver v. Manufacturing Company*, 2 Story, 432.

Suppose the rule in that respect is otherwise, still the judgment of the Circuit Court must be reversed, as the next exception to be considered is clearly well taken, and the error of the court is of such a character that it cannot be remedied in any other way than by granting a new trial.

Testimony was offered by the defendants to prove the existence and use, in 1858, at Grand Detour, in the State of Illinois, of a machine for bending plough handles, similar to a model shown to the witness under examination, and which, as is claimed by the defendants, was the same in its mode of operation as the patented machine of the plaintiffs.

Objection was seasonably made by the plaintiffs to the admissibility of the testimony, but the defendants stating that they expected to connect the same with the other testimony showing that the machine was in public use anterior to the invention described in the plaintiffs' patent, the court overruled the objection and admitted the testimony, and the bill of exceptions shows that other testimony was introduced by the defendants tending to prove that the machine described by the witness, or others like it, were in public use at that place before the date of the invention claimed and owned by the plaintiffs.

Evidence to prove such a defense is not admissible in any case without an antecedent compliance with the conditions specified in

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the fifteenth section of the Patent Act. Whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, "he shall state, in his notice of special matter, the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used," and if he does not comply with that requirement no such evidence can be received under the general issue. 5 Stat. at Large, 123; *Teese v. Huntingdon*, 23 Howard, 10.

Unless the rule of law was so the plaintiff might often be surprised at the trial, as he would rely upon the presumption which the patent affords, that he or his assignor or grantor was the original and first inventor of the improvement in question, and would not think it necessary to summon witnesses to rebut the evidence introduced by the defendant attacking the novelty of his patent. *Agawam Company v. Jordan*, 7 Wallace, 596.

Other exceptions to the rulings of the court were taken by the plaintiffs to the same effect, but it is unnecessary to refer to them, as the charge of the court shows to a demonstration, that the court throughout the trial overlooked the fact that such evidence is not admissible in patent cases, unless it appears that the defendant, thirty days before the trial, gave notice in writing to the plaintiff, or his attorney, of his intention to give such special matter in evidence, as required in the fifteenth section of the Patent Act, and that the notice given constituted a compliance with the several conditions therein specified.

Compliance with that provision being a condition precedent to the right of the defendant to introduce such evidence, under the general issue, it necessarily follows that the *onus probandi* is on him to show that the required notice was given to the plaintiff thirty days before the trial, and if he fails to do so he cannot introduce any evidence to controvert the novelty of the patent. *Philadelphia and Trenton Railroad Co. v. Stimpson*, 14 Peters, 459; *Silsby v. Foote*, 14 Howard, 222; *Phillips v. Page*, 24 Id., 168.

Undoubtedly the plea of not guilty puts in issue the novelty of the invention as well as the charge of infringement, but the answer to that suggestion, as applied to this case, is that the letters patent, when introduced by the plaintiffs, afforded *prima facie* presumption that the assignor of the plaintiffs was the original and first inventor of the improvement, and as the defendants had not given to the plaintiffs the required notice that they intended to offer evidence at the trial to overcome that presumption, they had no right to in-

Opinion of Swayne, Grier, and Miller, JJ., dissenting.

troduce any such evidence, and it necessarily follows that the court had no right to submit any such question to the jury.

Two defenses, said the court, are interposed by the defendants: (1.) That the patent is void for the want of novelty. (2.) That the machine constructed and used by the defendants does not infringe the patented machine of the plaintiffs; and the charge proceeds throughout upon the ground that both of those defenses were open and were to be determined by the jury.

Extended remarks were made by the judge to the jury, upon the evidence produced by the defendants to impeach the novelty of the invention, and very full explanations were given to them in respect to the principles of law by which they were to be governed in determining that question. Most of the rules of law as stated by the judge are correct, but the difficulty is that no such questions were involved in the pleadings.

JUDGMENT REVERSED. NEW VENIRE ORDERED.

Mr. Justice SWAYNE, with whom concurred GRIER and MILLER, JJ., dissenting.

I am unable to concur in the conclusion reached by the majority of my brethren, and will state briefly the grounds of my dissent.

The judgment is reversed, because no notice of the special matters which were proved to the jury is found in the record. If a sufficient notice had been given to the plaintiffs, according to the statute, the testimony was unquestionably proper to be received. It is shown by the bill of exceptions, that the admission of the evidence was objected to, but upon what ground, except as to one item mentioned hereafter, does not appear. The objection may have had reference to several considerations other than the want of notice. The case was tried in all respects as if no such defect existed. If due notice had not been given, and that fact had been brought to the attention of the learned district judge who tried the case, it cannot be doubted that he would at once have excluded the evidence, or have admitted it only after the defect had been properly supplied. It nowhere appears in the case that such an objection was made in the court below. A series of instructions were asked by the plaintiff's counsel, and refused by the court; neither of them has any reference to this point. The court was not asked to rule out the evidence, nor to direct the jury to disregard it. The point was not made in this court by the counsel for the plaintiffs in error. Other errors were strenuously insisted upon, but nothing was said upon this subject. Other objections to the admission of the testimony excepted to in the court below were fully discussed here, but there was entire

Syllabus.

silence as to the want of notice. The discovery that there is no notice in the record, was made after the cause had been argued and submitted to this court, and the objection does not now come from the plaintiffs in error. It is not of a jurisdictional character.

Upon a careful examination of the record, it seems to me doubtful whether any of the testimony in question required a notice to authorize its introduction, (*Corning v. Burden*, 15 Howard, 252,) except that of Mitchell, which was objected to upon a distinct and different ground. But, conceding this to be otherwise, under the circumstances, I think these propositions apply :

1. We are bound to presume that a proper notice was before the court below. This suggestion derives additional weight from the fact that the statute requires the notice to be given to the plaintiff, and does not prescribe that it shall be filed in the clerk's office, or made part of the record. In some of the circuits the practice has been heretofore simply to produce and prove it at the trial.

2. If there were no such notice, it was waived by the plaintiffs in error, and they are concluded by their conduct. *Laber v. Cooper*, 7 Wallace, 569.

3. The objection not having been made in the court below, according to the settled rule and practice of this court, it cannot be made here. *Id.*

4. The plaintiffs in error not having made the objection, this court ought not to make and enforce it for them. They have not suffered, and do not complain. The interests of justice do not require such vicarious and voluntary action on the part of this court. The counsel for the defendant in error has had no notice and no opportunity to be heard. I think, therefore, that the judgment ought not to be reversed.

BENNET v. FOWLER.

(8 Wallace, 445.)

1. Whether a given invention or improvement shall be embraced in one, two, or more patents, is a matter about which some discretion must be left with the head of the Patent Office; it being often a nice and perplexing question, and one not capable of being prescribed for by a general rule.
2. Accordingly, in a case where two reissued patents, both related to the lifting and depositing a load of hay in a mow of a barn, or in a rick or shed, but in one of them the lifter was somewhat differently constructed, so as to adapt it specially to the stacking of hay, (which, as this court assumed, had doubtless led the office to divide the improvements, and issue separate patents, in a case where the improvements had been embraced in one in the original patent,) the reissue in the two-fold form was held proper.

Statement of the case.

3. Where the defendant proposes to maintain at the final hearing of a case in chancery, that his machine does not infringe the complainant's patent, proof of non-infringement should appear in the testimony.

APPEAL from the Circuit Court for the Northern District of Illinois.

Fowler filed a bill in that court to enjoin Bennet and others from infringing two reissued patents, Nos. 1870 and 1869,* for improvements in hay elevators, issued February 14th, 1865. The improvements had been embraced in one, in the original patent. An analysis of the complainant, Fowler's, claims presented them thus:

No. 1870.

First Claim: In the construction of elevators for hay, the combination of the permanent pyramidal supporting frame, and the revolving cross-bar, and its braces, with a central supporting piece for allowing the cross-bar, and its braces, to turn upon the supporting frame, substantially in the manner and for the purposes described.

Second Claim: In the construction of elevators for hay, I claim, in combination with the cross-bar revolving upon an under supporting frame, the so arranging of the sheaves, and hoisting tackle, that the weight to be raised shall be upon one end of the cross-bar, whilst the power to raise that weight is applied to the opposite end of the cross-bar, for the purpose of enabling me to use a small and compact structure that may be easily transported or moved, occupying but little space, and sufficiently rigid within itself, without the use of additional guys, braces, or other fastenings, as herein described.

Third Claim: In the construction of elevators for hay, I also claim two pyramidal frames, one placed upon the other, the under frame being upright, and the upper inverted, and the head blocks, or apices of both, so united as that the upper frame may freely turn upon, whilst it is supported by the lower frame, substantially as described.

No. 1869.

First Claim: So constructing a machine for elevating hay or other like products, that the same power employed in elevating said products, will also revolve the top of the machine while the load is being elevated, or when high enough to pass over the top of the stack, and so that it may be raised from either, or any side of the machine,

* By some clerical error at the Patent Office, the higher number, 1870, came before the lower, 1869.

Opinion of the court.

and deposited on the stack at any other side, and wherever desired, substantially as described.

Second Claim: An elevator or crane, (when constructed as herein described,) in combination with a device for grasping hay, or other like products, and depositing it upon a stack substantially as described.

The defendants put in an answer setting up various defenses to the bill, but no proofs were taken in support of it, so that it need not be referred to more particularly. The complainant filed a replication to the answer.

When the cause was brought on for hearing no counsel appeared for the defendants. After proof of infringement, a decree was rendered for the complainant, affirming the validity of the patents and the infringement, and referring the cause to a master to take proofs of the gains and profits of the defendants for the use of the machines.

A good deal of testimony was taken before the master, on the subject of the gains and profits, counsel on both sides appearing before him. The master reported in favor of the complainant \$1,860. The counsel took one exception to the report, namely, that part of the allowance for profits against the defendants were for infringements of third persons. The court modified the report in this respect, and reduced the amount to \$1,500. A decree having been entered accordingly, the case was brought by the defendants here.

Mr. Coburn, for the appellant, contended:

1. That the court erred in affirming the validity of the two re-issued patents.
2. That the machines of the defendants did not infringe the complainant's patents.

Mr. Goodwin, contra.

Mr. Justice NELSON delivered the opinion of the court.

An objection has been taken by counsel for the defendants that the court erred in affirming the validity of the two patents, Nos. 1869, 1870.

It may be that if the improvements set forth in both specifications had been incorporated into one patent, the patentee taking care to protect himself as to all his improvements by proper and several claims, it would have been sufficient. It is difficult, perhaps impossible, to lay down any general rule by which to determ-

Statement of the case.

ine when a given invention or improvements shall be embraced in one, two, or more patents. Some discretion must necessarily be left on this subject to the head of the Patent Office. It is often a nice and perplexing question. It is true, in the present case both patents relate to the lifting and depositing a load of hay in a mow of a barn, or in a rick or shed. But, in No. 1870, the lifter is somewhat differently constructed, so as to adapt it specially to the stacking of hay, which, doubtless, led the office to divide the improvements, and issue separate patents. The improvements were embraced in one in the original patent.

The counsel also objects that the machines of the defendants do not infringe the complainant's patents, but, if he had intended to contest this point, he should have introduced proof to this effect. Proof of the infringements given, that the machines made and used by the defendants were substantially like the complainant's, was sufficient, if not rebutted. Models were also produced on the argument before the court, which confirm this proof.

DECREE AFFIRMED.

WISE v. ALLIS.

(9 Wallace, 737.)

1. In giving notice, under the 15th section of the Patent Act of July 4th, 1836, of the names and places of residence of those by whom he intends to prove a previous use or knowledge of the thing, and where the same had been used, the party giving notice is not bound to be so specific as to relieve the other from all inquiry or effort to investigate the facts. If he fairly puts his adversary in the way that he may ascertain all that is necessary to his defense or answer, it is all that can be required, and he is not bound by his notice to impose an unnecessary and embarrassing restriction on his own right of producing proof of what he asserts.
2. Held, therefore, in a suit for infringing a patent for balancing millstones, that when, in addition to the particular town or city in which such large objects as millstones are used, the name and residence of the witness by whom that use was to be proved was also given, there was sufficient precision and certainty in the notice.

ON certificate of division of opinion between the judges of the Circuit Court for the District of Wisconsin.

The Patent Act of July 4th, 1836, referring to suits for the infringement of patents, enacts by its 15th section that "whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, he shall state in his notice of special matter the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used."

Argument for the defendant.

This section being in force, Wise sued Allis in the court below for infringement of a patent for an improvement in balancing millstones. The defendant pleaded the general issue, and also gave notice that the invention claimed was well known and in general use before the patentee professed to have invented it, and he specified Utica, Rochester, Buffalo, Albany, *New York city, and Brooklyn*, in the State of New York, as the places where it had so been used, and gave the names of witnesses in each of those places by whom he expected to prove that fact; but he did not specify the mills in which the supposed prior use had been made.

On the trial the judges of the Circuit Court differed in opinion as to whether the notice was sufficiently specific in its reference to the places where the prior use was had, and certified that difference to this court in the shape of two questions, in substance, to wit, this, whether the evidence of use, taken under that notice, was admissible. In form, the questions were:

1st. Is the defendant entitled, under his notice, to give evidence of the use of said invention or millstone balance by any person or persons prior to the alleged invention by the patentee thereof?

2d. Should evidence of such prior use of said invention or millstone balance be excluded on the ground that the notice aforesaid is defective and insufficient for the purpose of such evidence?

Mr. Walker, for the defendant, contended,

That the notice did not specify place: that Utica, Rochester, Buffalo, Albany, *New York city, or Brooklyn*, were indeed each *a place*. So was England, India, France, Spain, or Wisconsin each *a place*. To refer the plaintiff to New York city, with her population of 1,300,000, and her mills, numbering 916, as the place where prior use was made of his invention, was mockery. Reference to the whole State of Wisconsin, Iowa, Minnesota, or Kansas, would have been to a less number of people or mills; and to a place where search could have been made with far less of danger. Under this notice, after plaintiff had traveled from Wisconsin to New York city; had gone the rounds of nine hundred and fifteen of her mills, and returned after incurring onerous expenses, and finding nothing like his invention, and all this within thirty days; he might still be defeated on the trial, by having the fact sprung upon him in evidence, that it was the very nine hundred and *sixteenth* mill in which his cherished invention had been used. Then why not have told him so at first, *in the notice?* He could then have gone to that mill at once. If he had found the notice true, he could have abandoned an unjust suit. If false, could have

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prepared to repel a pirate's unjust defense. Yet, New York was but one of six large cities named in the notice to be searched by the plaintiff within thirty days, and a thousand miles away.

Mr. M. H. Carpenter, contra.

Mr. Justice MILLER delivered the opinion of the court.

The decree of particularity or certainty necessary in pleas and notices is an ever-recurring question in judicial proceedings, and can never be effectually disposed of so long as new and varying circumstances may present the question in new aspects.

The object of the rule is undoubtedly to enable the other party to make such answer or response to the matter set up in the plea or notice, either by way of pleading or of evidence, or such cross-examination of the witness of the party setting up the plea or notice as the facts of his case may enable him to do. In other words, to apprise him fairly of what he may expect to meet under the plea or notice. *Teese v. Huntingdon*, 23 Howard, 10.

In the case before us, in addition to the common-law rules, Congress has, for the protection of patentees, made an enactment on the subject. With the requirements of this statute the defendant has complied, so far as the names and residence of the witnesses are concerned; but it is denied that he has been sufficiently specific as to the places where the use was to be shown. It is said that it is not sufficient to name the city, but that the particular mill in which the invention had been used must be pointed out. But we cannot take judicial notice how many, or how few, mills using stones may be in any particular locality. In some town there may be but one. Nor do we think that the party giving notice is bound to be so specific as to relieve the other from all inquiry or effort to investigate the facts. If he fairly puts his adversary in the way that he may ascertain all that is necessary to his defense or answer, it is all that can be required, and he is not bound by his notice to impose an unnecessary and embarrassing restriction on his own right of producing proof of what he asserts. We are all, therefore, of opinion, that when, in addition to the particular town or city in which such large objects as millstones are used, the name and residence of the witness by whom that use is to be proved is also given, there is sufficient precision and certainty in the notice. *Phillips v. Page*, 24 Howard, 164.

The questions propounded are accordingly answered: the first in the affirmative, and the second in the negative.

Statement of the case.

RUBBER COMPANY v. GOODYEAR.

(9 Wallace, 788.)

1. Where a patentee dies, the surrogate of the place where the decedent was domiciled properly has jurisdiction to take probate of his will and issue letters testamentary.
2. Where several executors are appointed by the will of a patentee decedent—provision being made, however, for one alone acting—and but one proves the will and receives the letters of administration, he alone can maintain an action for infringement of the letters patent at common law.
3. Under the laws of the United States, where a patent is granted by the government to C. G. as executor, he can maintain a suit on the patent in all respects as if he had been designated in the patent as trustee instead of executor.
4. An objection to the authority of an executor to maintain a suit on letters patent should be taken by a plea in abatement.
5. The novelty of the Charles Goodyear patent for vulcanized rubber sustained.
6. A patentee or his representative in a reissue may enlarge or restrict the claim, so as to give it validity and secure the invention.
7. A process and the product of a process may be both new and patentable, and are wholly disconnected and independent of each other.
8. Extended letters patent cannot be abrogated in any collateral proceeding for fraud.
9. A license to use an invention by a person only at "*his own establishment*," does not authorize a use at an establishment owned by himself and others.
10. In taking an account, the master is not limited to the date of entering the decree; he can extend it down to the time of the hearing before him.
11. An objection that the word "patented" was not affixed by the complainant, under section 13 of act of March 2d, 1861, must be taken in the answer, if it is intended to be raised at the hearing or before the master.
12. A decree "for all the profits made in violation of the rights of the complainants under the patents aforesaid, by respondents, by the manufacture, use, or sale of any of the articles named in the bill of complaint," is correct in form.
13. Profits are rightly estimated by the master by finding the difference between cost and sales.
14. In estimating this cost, the elements of cost of materials, interest, expense of manufacture and sale, and bad debts, considered by a manufacturer in finding his profits, are to be taken into account, and no others.
15. Interest on capital stock and "manufacturer's profits" were properly disallowed by the master.
16. Profits due to elements not patented, which entered into the composition of the patented article, may sometimes be allowed. They were, however, properly disallowed in this particular case.
17. Extraordinary salaries were properly disallowed by the master, on the ground that they were dividends of profit under another name.

APPEAL from the Circuit Court for Rhode Island.

This case involved various questions arising upon the well-known patent of Charles Goodyear, for what is commonly styled vulcanized India-rubber, and on different surrenders to himself, as also, after his death, to his testamentary executors.

The novelty of Goodyear's invention was also brought into question.

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The reader is referred for the case to the statement of it as made in the opinion.

Messrs. Payne, Cushing, Parsons, and Black, for the appellants;
Messrs. Stoughton, Ackerman, and Evarts, contra.

Mr. Justice SWAYNE stated the case and delivered the opinion of the court.

This is an appeal in equity from the decree of the Circuit Court of the United States of the District of Rhode Island. The appellees were the complainants in the court below. The defendants were the appellants, and William W. Brown, Edwin M. Chaffee, and Augustus O'Bourne. The bill alleges that a patent for "a new and useful improvement in India-rubber fabrics" was originally granted to Charles Goodyear, deceased, on the 15th of June, 1844; that this patent was surrendered, and that on the 15th of June, 1849, a patent was reissued to the original patentee, "for a new and useful improvement in processes for the manufacture of India-rubber;" that it was extended by the Commissioner of Patents on the 14th of June, 1858; that this patent was surrendered by Charles Goodyear, Jr., executor of Charles Goodyear, deceased, and reissued to him as executor on the 20th of November, 1860, in two patents, one entitled, "for improvement in the manufacture of caoutchouc," and the other, "for improvement in the art of preparing caoutchouc;" that the complainants, other than Charles Goodyear, Jr., are the assignees of licensees of Charles Goodyear, deceased; that the complainants have the exclusive right to manufacture and sell army and navy equipments made of vulcanized India-rubber, including vulcanized India-rubber blankets, coats, cloaks, cloth, clothing, ponchos for army, navy, and other purposes, and also of vulcanized India-rubber bulbs, to be used in the manufacture of syringes; and that the defendants have infringed the patents by the manufacture and sale of these articles.

The prayer of the bill is for an injunction and an account.

The answer denies that Goodyear was the original and first inventor of the improvement described in the original patent. It denies also the infringement alleged in the bill. It sets up as special defenses that only one of the persons named in the will of Charles Goodyear, deceased, as executors, is made a party complainant; that the original patent is invalid; that all the reissues are void, even if the original patent were valid, because the claims are broader than the claim in the original patent; and that they are not, nor is either of them, in fact, for the same invention as that for which the original patent was granted; and that the ex-

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tension of the patent in June, 1858, by the Commissioner of Patents, was procured "by fraud and collusion, by fraudulent suppressions and concealments from, and by false and fraudulent representations to," that officer. The answer also claims that the defendants are not infringers, because they have manufactured their goods under a license from the original patentee to E. M. Chaffee, dated June 25th, 1848, which they insist is valid and outstanding, and a complete defense to this suit.

A large mass of testimony was taken by the parties. The record covers nearly one thousand two hundred printed pages. The court de creed in favor of the complainants.

The defendants have brought the case here for review.

It has been argued in this court on both sides with great learning and ability. The propositions to which our attention has been called as grounds for the reversal of the decree are not numerous, and the scope of our remarks will not be extended beyond them.

Charles Goodyear, deceased, by his will appointed his son, Charles Goodyear, Jr., his wife, Fanny Goodyear, and James A. Dorr, his executors. The will provided that a majority of the executors should decide all questions that might arise; that the acts of a majority should be as binding as the acts of all; that if at any time there should be but two, they might appoint a third; and that if there should be but one, he might appoint another. The manner of appointment in both cases was specified.

It is insisted that Charles Goodyear, Jr., alone, as executor, cannot maintain this suit, and that his co-executors named in the will are necessary parties. The evidence in the record shows that the testator was domiciled and had property in the city of New York. This gave the surrogate there jurisdiction to take the probate of the will, and to issue letters testamentary. Charles Goodyear, Jr., alone proved the will, and received such letters. The other persons named as co-executors have taken no step in that direction. They have never at any time assumed to do any act or claimed any right by virtue of their nomination in the will.

At the place where the letters testamentary were issued the common law relied upon by the appellants was in conflict with the statutory provisions of the State, and was therefore abrogated. It could no more be recognized in the Federal than in the State tribunals. Nor is the rule in courts of equity different from the rule in the courts of law. Neither can recognize the authority of an executor any more than that of administrator, and neither will aid him to obtain possession and control of the estate, until he has fulfilled the conditions and given the guarantees of fidelity and

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solvency prescribed by the local law. A different rule could hardly fail to be followed by the most mischievous consequences.

If, however, the question were to be settled by the rules of the common law, we should be of opinion, upon the facts of the case as disclosed in the record, that the suit was well brought by Charles Goodyear, Jr., alone. But there are other considerations bearing upon the subject which are still more satisfactory to our minds.

The patent law of the United States authorizes an executor to surrender a patent and take a reissue. Act of July 4th, 1836, § 13. In this case the patent was surrendered by Charles Goodyear, Jr., as executor, and the reissues were to him in the same character. This was a specific grant by the government, and vested in him exclusively the legal title. The suffix of *executor* signified the trustee character in which he assumed to act, and in which he was recognized and dealt with by the Commissioner. The designation, and the trust which it implied, did not prevent the passage of the legal title or qualify the estate which accompanied it. It follows from this view of the subject that the grantee can sustain a suit on the patent in all respects, as if he had been designated in it as *trustee* instead of *executor*.

But, conceding for the purposes of the argument, that he occupies the same relation to the patents reissued to him as to the one reissued to the testator, and which he surrendered, then he was a foreign executor in the forum where the suit was instituted.

The bill alleges that he was the executor of Charles Goodyear, deceased. His rights as such in that forum depended upon the local law of Rhode Island. If his authority to sue there in his representative character was intended to be questioned, it should have been done by plea or by the answer. Not having been done in that way, the defendants are concluded, and the question is no longer open in the case. The answer is silent upon this point. Its averments touching the jurisdiction of the surrogate of the city of New York are effectually disposed of by the complainants' proofs.

In any view which can be taken of the subject the objection is untenable.

The proposition that the patent is fatally defective, because it is impossible to make merchantable goods according to the directions contained in the specifications, cannot be entertained. The answer contains no averment upon the subject. No such issue was tendered to the complainants, and they have had no notice that such a defense was intended to be relied upon. In equity, the proofs and allegations must correspond. The examination of the case by the court is confined to the issues made by the pleadings.

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Proofs without the requisite allegations are as unavailing as such allegations would be without the proofs requisite to support them. *Foster v. Goddard*, 1 Black, 518; *Tripp v. Vincent*, 3 Barbour's Chancery, 613; *Boone v. Chiles*, 10 Peters, 178; *Harrison et al. v. Nixon*, 9 Id., 483.

It is alleged in the answer that the testator was not the original and first inventor of the process described in his patents.

The original patent was issued in 1844. The invention has since been covered by a succession of patents, the last of which, the reissues in question, are still unexpired, and are the foundation of this litigation. The discovery was one of very great value. It is a mine of wealth to the possessors. Since the first patent was issued there have been numerous cases of litigation involving its validity. They were earnestly contested. In every instance the patent was sustained. This litigation was remarked upon by the counsel for the appellants, and it was added that this question is now, for the first time, presented to this court for consideration. It is a just commentary to say that such a litigation is always to be expected in cases like this. There are always those who are ready to gather where they have not sown. The number and ardor of the conflicts is usually in proportion to the value of the prize at stake. The validity of the claim of the testator was never shaken by any adjudication. It has been uniformly affirmed and sustained. If the subject was never brought here before, it was doubtless because those who were defeated elsewhere saw no ground for the hope of a more favorable result in this court. These considerations are very persuasive to the presumption that the claim of Charles Goodyear, the elder, that he was the original and first inventor, is impregnable. If it were not so, we cannot doubt that it would have been overthrown in the numerous and severe assaults which have been made upon it. We have, however, examined the question by the light of the evidence found in the record, and in the absence of the adjudications referred to should have had no difficulty in coming to the same conclusion. We entertain no doubt upon the subject. The point was not very earnestly pressed upon our attention in the argument at the bar. We deem what we have said in regard to it sufficient.

The patents reissued to the executor upon the surrender of the patent reissued to the testator were numbered respectively 1084 and 1085. The one numbered 1085 is for the process by which vulcanized India-rubber is manufactured. The other one is for the result of the process in the form of the article produced.

It is contended by the appellants that both these patents are in-

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valid, for two reasons—1st, because they are broader than the claims of the patent surrendered by the executor; and, 2d, because one is for a process, and the other for the product of that process. The court below held the objection to the patent for the process—that it is too broad—fatal to its validity, because the claim embraced “other vulcanizable gums” besides India-rubber as articles to which the process was to be applied. From this part of the decree below no appeal was taken by the complainants. It is, therefore, final and conclusive in its effect, and the patent to which it relates must be laid out of view. It remains, therefore, to consider only the patent No. 1084, which is for the product.

The claims of the patent reissued to Charles Goodyear, deceased, in 1849, are as follows:

“What I claim as my invention and desire to secure by letters patent is the curing of caoutchouc, or India-rubber, by subjecting it to the action of a high degree of artificial heat, substantially as herein described, and for the purposes specified.

“And I also claim the preparing and curing the compound of India-rubber, sulphur, and a carbonate or other salt, or oxide of lead, by subjugating the same to the action of artificial heat, substantially as herein described.”

The claim of the patent for the product is thus expressed:

“What is claimed as the invention of Charles Goodyear, deceased, is the new manufacture of vulcanized India-rubber, (whether with or without other ingredients,) chemically altered by the application of heat, substantially as described.”

The specification, among other things, contains these clauses:

“For many purposes the manufacture is improved by the addition of other substances than sulphur, among which white lead is one of the best, and which, when used, may be combined in the mixture above described, in the proportion of seven parts by weight, thereby forming a triple compound. Other salts of lead may be used with advantage, and coloring matter may be also incorporated with the mixture for the purpose of imparting colors to the product.

“And other materials, such as cotton, silk, wool, or leather, may be incorporated or combined with the India-rubber and sulphur, thereby modifying the strength, elasticity, or other qualities of the new manufacture for particular purposes; as it is found that the new substance or product will be produced whenever the essential elements of rubber, sulphur, and heat are used, whether such other materials are incorporated or not.”

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A patent should be construed in a liberal spirit, to sustain the just claims of the inventor. This principle is not to be carried so far as to exclude what is in it, or to interpolate anything which it does not contain. But liberality, rather than strictness, should prevail where the fate of the patent is involved, and the question to be decided is whether the inventor shall hold or lose the fruits of his genius and his labors. *Corning v. Burden*, 15 Howard, 269; *Battin v. Taggart*, 17 Id. 74. The surrender was made by the executor, for the reason that the specification was defective and required amendment. This the law permitted, if the facts brought the case within the provisions of the statute. The Commissioner was charged with the duty of examining the facts and deciding upon the application. His judgment is shown in the results. Upon comparing the context of the specifications of the surrendered and of the reissued patent, and giving to each a reasonable interpretation, we are satisfied that the decision was correct, and we see no reason to reverse it. It is the right of the patentee and his representatives to enlarge or restrict the claim, so as to give it validity and secure the invention. *Battin v. Taggart*, 17 Howard, 84.

Patentable subjects, as defined by the patent law, (act of 1836, § 6, (are "any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter." A machine may be new, and the product or manufacture proceeding from it may be old. In that case the former would be patentable and the latter not. The machine may be substantially old and the product new. In that event the latter, and not the former, would be patentable. Both may be new, or both may be old. In the former case, both would be patentable; in the latter neither. The same remarks apply to processes and their results. Patentability may exist as to either, neither, or both, according to the fact of novelty, or the opposite. The patentability, or the issuing of a patent as to one, in nowise affects the rights of the inventor or discoverer in respect to the other. They are wholly disconnected and independent facts. Such is the sound and necessary construction of the statute.

This objection to the patent, we think, is also not well taken.

Can we go behind the action of the Commissioner in extending the patent and inquire into the frauds by which it is alleged that the extension was procured? The fifth section of the act of 1790, (1 Stat. at Large, 109,) provided for the repeal of patents under the circumstances and in the manner specified. This act was repealed by the act of 1793. 1 Stat. at Large, 318. The tenth section of that act re-enacted the fifth section of the act of 1790. The fifth

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section of the latter act authorized substantially the same defenses in suits upon patents which are allowed by the 15th section of the act of 1836, with the further provision, that if the facts touching either defense were established, "judgment shall be rendered for the defendant with costs, and the patent shall be declared void." This act continued in force until it was repealed by the act of 1836. These provisions were not then, and they have not since been, re-enacted. The 16th section of the act of 1836 authorizes a court of equity, in cases of interference, to take jurisdiction and annul the patent issued to the party in the wrong. Beyond this the patent laws are silent upon the subject of the exercise of such authority. This review furnishes a strong implication that it was the intention of Congress not to allow a patent to be abrogated in any collateral proceeding, except in the particular instance mentioned, but to leave the remedy in all other cases to be regulated by the principles of general jurisprudence. To those principles we must look for the solution of the question before us. The subject was examined by Chancellor Kent with his accustomed fullness of research and ability, in *Jackson v. Lawton*, 10 Johnson, 23. He there said: "Unless letters patent are absolutely void on the face of them, or the issuing of them was without authority, or was prohibited by statute, they can only be avoided in a regular course of pleading, in which the fraud, irregularity, or mistake is regularly put in issue. The principle has been frequently admitted, that the fraud must appear on the face of the patent to render it void in a court of law, and that when the fraud or other defect arises on circumstances, *dehors* the grant, the grant is voidable only by suit. 1 Henning & Munford, 19, 187; 1 Munford, 134. The regular tribunal is chancery, founded on a proceeding by *scire facias* or by bill or information." The patent in that case was for land, but, as regards the point here under consideration, there is no distinction between such a patent and one for an invention or discovery. If there be, the case is stronger as to the latter. In the case of *Field v. Seabury*, 19 Howard, 332, the patent was also for land. This court ruled the point in like manner, and the same remarks apply. Viewing the subject in the light of the principle involved, we can see no defect in the parallelism between that case and the one before us.

The extension was granted by the Commissioner pursuant to the first section of the act of 1848 and the eighteenth section of the act of 1836. The latter declares that upon the making and recording of the certificate of extension "the said patent shall have the same effect in law as though it had been originally granted for the term of twenty-one years." The law made it the duty of the Commis-

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sioner to examine and decide. He had full jurisdiction. The function he performed was judicial in its character. No provision is made for appeal or review. *Foley v. Harrison*, 15 Howard, 448. His decision must be held conclusive until the patent is impeached in a proceeding had directly for that purpose according to the rules which define the remedy, as shown by the precedents and authorities upon the subject. We are not, therefore, at liberty to enter upon the examination of the evidences of fraud to which we have been invited by the counsel for the appellants. The door to that inquiry in this case is closed upon us by the hand of the law. The rule which we have thus laid down is intended to be limited to the class of cases to which, as respects the point in question, the one before us belongs. We decide nothing beyond this.

The proof of infringement makes a case so clear for the appellees, in our judgment, that it is deemed unnecessary to extend this opinion by discussing the subject.

It is unnecessary to consider the respective rights of the several corporation complainants in this litigation, because it is clear that such as do not belong to them are vested in Charles Goodyear, the executor, by virtue of his holding the entire legal title of the patent.

The appellants meet the case in the aspect of infringement, by setting up a license from Charles Goodyear, deceased, to E. M. Chaffee, bearing date on the 25th of June, 1846, which they insist is a complete bar to the relief sought by the bill. This instrument gives to Chaffee, "his executors, administrators, and assigns, a free license to use the said Goodyear's gum-elastic composition for coating cloth for the purpose of japanning, marbling, and variegate japanning, at his own establishment, but not to be disposed of to others for that purpose without the consent of the said Charles Goodyear; the right and license hereby conferred being limited to the United States, and not extending to any foreign country, and not being intended to convey any right to make any contract with the government of the United States."

There are several objections to the view taken of this license by the counsel for the appellant. It authorizes Chaffee to use it himself. It gave him no right to authorize others to use it in conjunction with himself, or otherwise, without the consent of Goodyear, which is not shown, and not to be presumed. It was to be used at his own establishment, and not at one occupied by himself and others. Looking at the terms of the instrument, and the testimony in the record, we are satisfied that its true meaning and purpose were to authorize the licensee to make and sell India-rubber cloth,

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to be used in the place, and for the purposes, of patent or japanned leather. In our judgment it conveyed authority to this extent and nothing more. The practical construction which the parties themselves have given to a contract by their own conduct is, in cases of doubt, always entitled to great weight. That this practical construction, in the case before us, was in accordance with that which we have given to the instrument, is clearly shown by the following facts: The defendants, Chaffee, Bourne, and Brown, were hostile to the extension, and collected evidence to defeat it. If they had understood the license then, as they construe it now, their interest would have prompted an opposite line of conduct. In 1856, Goodyear the elder, and others, sued Brown, Bourne, and Chaffee for an infringement of the patent reissued to Goodyear—by manufacturing India-rubber shoes. In September of that year, they filed their answer. The license, as they now construe it, would have been conclusive against the complainants. The answer is long and elaborate. It makes no allusion to the license. An absolute injunction was decreed. The Chaffee license bears date in 1846. In 1858, the same defendants procured a license to manufacture rubber shoes, from Haywood. The terms were stringent and onerous. This license would have been useless, if their present construction of the license to Chaffee is correct. It is not clear that any interest was conveyed by Chaffee to the other parties, if ever, until since the commencement of this suit. The claim was not heard of before the conflict began. The license sets forth in express terms, that it was not intended to give any authority to contract with the United States. All the articles to which this controversy relates, were manufactured for the United States, under contracts with the quartermaster general. This defense cannot avail the defendants.

Upon looking further into the record we find that the complainants took seven exceptions, and the defendants twenty-eight, to the master's report in the court below, all of which, on both sides, were overruled. The complainants not having appealed, their exceptions are not open to examination. Our attention, therefore, will be confined to those taken by the defendants, who have brought them before us by this appeal. Many of them relate to the findings of the master upon questions of fact. Others are predicated of facts which, upon examination, are not found to be as the exceptions assume. In all these cases we are satisfied with the master's conclusions, and do not propose to review them. We shall dispose of such other points arising upon the report, as we deem it proper to remark upon, without adverting particularly to the exceptions by which they are raised.

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In taking the account the master was not limited to the date of the decree. In such cases, it is proper to extend the account down to the time of the hearing before him, unless the infringement ceased prior to that time. The rights of the parties are settled by the decree, and nothing remains but to ascertain the damages and adjudge their payment. The practice saves a multiplicity of suits, time, and expense, and promotes the ends of justice. We see no well-founded objection to it.

The thirteenth section of the act of March 2d, 1861, requires "that every article made or sold under the protection of a patent shall have fixed upon it the word 'patented,' and the day and year when the patent was granted; and when, from the character of the article, that may be impracticable, a label on which a notice to the same effect is printed shall be attached;" and if this be not done it is declared "that in case of suit for infringement, brought by the person failing so to mark the articles, no damages shall be recovered by the plaintiff except on proof that the defendant was duly notified of the infringement, and continued, after such notice, to make and vend the articles patented," &c. It is said that the bill contains no averment on this subject, and that the record is equally barren of proof that any such notice was ever given to the defendants, except by the service of process, upon the filing of the bill. Hence, it is insisted that the master should have commenced his account at that time, instead of the earlier period of the beginning of the infringement. His refusal to do so was made the subject of an exception. The answer of the defendants is as silent upon the subject as the bill of the complainants. No such issue was made by the pleadings. It was too late for the defendants to raise the point before the master. They were concluded by their previous silence, and must be held to have waived it. It cannot be considered here. We refer to the authorities cited in an earlier part of this opinion, in support of the rule upon this subject.

The Circuit Court decreed that the Providence Company was liable "for all the profits made in violation of the rights of the complainants, under the patent aforesaid, by respondents, by the manufacture, use, or sale of any of the articles named in said bill." This was in accordance with the rule in equity cases established by this court. *Livingston v. Woodworth*, 15 Howard, 546; *Dean v. Mason*, 20 Id., 198. It was not objected to in the argument here, but it was strenuously insisted that the master had erred in his application of the rule, and the court in confirming his conclusions. We have examined the report and are satisfied that he discharged his duty with exemplary care and diligence. The report is char-

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acterized by unusual ability. He has stated two accounts: one against the Providence Company and the other against the Columbian Company, which he finds to be the Providence Company under another name.

The Providence Company manufactured articles covered and articles not covered by the patent in question. No separate account was kept as to their respective cost and profit. The business as to both was so intermingled and confused that approximate results only were possible, and these were attainable by but one process. He applied the principle of apportionment as follows:

The gross amount of sales of articles of both classes was \$2,648,-131.49. The gross amount of sales of articles covered by the patent, \$1,899,696.78. Gross amount of profits, \$349,520.02. Proportion of profits due to articles covered by the patent, \$250,757.72. The master reports that this result approaches exactness, and that it is favorable to the defendants. The Columbian Company manufactured only patented articles. Its books were properly kept. The data were clear and certain, and he had no difficulty in reaching a satisfactory conclusion. He found the amount of profits to be \$60,000.

Profits of the Providence Company.....	\$250,759 72
Profits of the Columbian Company.. ..	60,000 00
Total for which the defendants are liable.....	\$310,757 72

In making up the account the master allowed deductions from profits, for bad debts, for rents, and interest paid—debiting rents and interest received; he allowed for the market value of the materials on hand when the infringement began, for the cost of those acquired afterwards to carry on the business, and for the usual salaries of the managing officers. In this connection we take the following paragraph from the report:

“Large amounts appear by the books to have been expended in repairs of building and machinery, and in the purchase of new machinery, tools, and fixtures. No further allowance is made by the master for wear, and tear, and depreciation.”

He refused to allow the extraordinary salaries which it appeared by the books had been paid, being satisfied they were dividends of profit under another name, and put in that guise for concealment and delusion. The allowance for repairs and other items mentioned in this connection doubtless exceeded the wear and tear which could have occurred during the time of the infringement. He refused to allow the value, at the time they were used, of ma-

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terials bought for the purposes of the infringement. The market was a rising one. The defendants had the benefit of it as to those which were untainted by dishonesty. Those bought later stand upon a different footing. The claim is entitled to no special favor. There must be a fixed rule. There can be none better than the cost as to those to which that principle was applied. The articles might have fallen in value instead of rising. The defendants cannot complain, as they are held liable only for the ultimate profits of the piracy.

He refused to allow the profits due to elements not patented, which entered into the composition of the patented articles. There may be cases in which such an allowance would be proper. This is not one of them. The manner in which the books of the Providence Company were kept renders such an account impossible as to the business done in their name.

The conduct of the defendants in this respect has not been such as to commend them to the favor of a court of equity. Under the circumstances, every doubt and difficulty should be resolved against them. *Lupton v. White*, 15 Vesey, 432; *Copeland v. Crane*, 9 Pickering, 79; *Dexter v. Arnold*, 2 Sumner, 109; *Miller v. Whittier*, 36 Maine, 585. The allowance was properly denied.

He refused to allow manufacturer's profits and interest on the capital stock. This was correct. "The profits made in violation of the rights of the complainants" in this class of cases, within the meaning of the law, are to be computed and ascertained by finding the difference between cost and yield. In estimating the cost, the elements of price of materials, interest, expenses of manufacture and sale, and other necessary expenditures, if there be any, and bad debts, are to be taken into the account, and usually nothing else. The calculation is to be made as a manufacturer calculates the profits of his business. "Profit" is the gain made upon any business or investment, when both the receipts and payments are taken into the account. *People v. Super. Niag.*, 4 Hill, 23. The rule is founded in reason and justice. It compensates one party and punishes the other. It makes the wrong-doer liable for actual, not possible, gains. The controlling consideration is, that he shall not profit by his wrong. A more favorable rule would offer a premium to dishonesty, and invite to aggression.

The jurisdiction of equity is adequate to give the proper remedy, whatever phase the case may assume; and the severity of the decree may be increased or mitigated according to the complexion of the conduct of the offender. We find no error in the record, and the decree of the Circuit Court is

AFFIRMED.

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NOTE.—BRADLEY and STRONG, JJ., had not taken their seats upon the bench when the preceding case was argued and decided.

SAME v. SAME.

(9 Wallace, 805.)

A bill of review will not be granted either where the party could by an attentive examination of the exhibits, attached to the bill in the original case, have discovered what he relies on as newly discovered matter, and has thus been guilty of laches; or where the court is satisfied that upon the case offered to be made out, the decree ought to be the same as has been already given.

ON motion of *Mr. Cushing*, for the appellant, to stay the mandate and for leave to file a bill of review; *Mr. W. E. Curtis* opposing the application.

Mr. Justice SWAYNE stated the case and delivered the opinion of the court.

The appellants have submitted a motion that the mandate in this case be stayed, and that they have leave to file a bill of review. The ground of the application is the alleged fact that George B. Dorr and William Judson, both deceased, were largely interested in the patent which lies at the foundation of this litigation, and that their legal representatives should have been made parties to the suit. It is shown that a suit has been recently instituted by Louisa Judson, widow and executrix of William Judson, against the appellants for the same infringements of the patent which are charged in the bill in this case. Affidavits are on file—taken to show the interest of Judson—and that the appellants had no knowledge of the fact until since the determination of the case in this court. They are silent as to the interest of Dorr. Upon looking into the record, we find that the subpoena in this case bears date on the 30th of October, 1862. The litigation was in progress from that time until it was determined here by the opinion of this court, delivered on the 7th of February last, affirming the decree of the Circuit Court in favor of the complainants.

Exhibit "B," annexed to the complainants' bill in the record, is the opinion of Mr. Justice GRIER in the case of *Goodyear v. Day*, involving the same patent.

That opinion was delivered at the May Term, 1852, of the Circuit Court of the United States for the District of New Jersey. It appears by this opinion that the point was made in that case by the defendant, that William Judson and James A. Dorr were parties

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in interest, and should be made parties complainant. The assignment by Goodyear to Judson and Dorr was before the learned judge, and the question made was fully considered. They were not made parties. Exhibit "C," annexed to the bill, is the opinion of the same justice in the case of Goodyear and the New England Car Spring Company against the Central Railroad of New Jersey, argued in the Circuit Court of that State on the 24th of March, 1853. The suit in that case also was founded upon the Goodyear patent. The objection that Judson and Dorr should have been co-complainants was set up. The assignment to them by Goodyear was analyzed and considered. The learned judge arrived at the conclusion that they were not necessary parties, and overruled the point. These exhibits were as much a part of the bill in this case as anything which it contained. The appellants are estopped from denying knowledge of its contents. They were sufficient to show the existence of the assignment to Judson and Dorr, and the general scope and character of its contents. If not satisfied with the views of Mr. Justice Grier upon the subject they should have made the defense by plea or answer. Not having spoken at the proper time in that way, they cannot be permitted to speak with effect now in this way. They have slept upon knowledge which, if material, should have awakened them to activity more than seven years ago. Their laches is fatal to their application. It is a settled rule in this class of cases "that the matter must not only be new, but such as the party, by the use of reasonable diligence, could not have known; for, if there be any laches or negligence in this respect, that destroys the title to the relief." Story's Equity Pleadings, § 414. Whether such an application shall be granted or refused, rests in the sound discretion of the court. The requisite leave is never a matter of right. *Id.*, § 417. The affidavits have failed to satisfy us, that if a bill of review were filed the result would affect the decree which has been rendered.

We are all of the opinion that, under the circumstances, it would not be proper to withhold longer from the appellees the fruits of the relief to which we have found them entitled. It is not probable that the appellants will be injured by any litigation which the representatives of Judson or Dorr may institute. If their interests, as claimed, shall be established, the Circuit Court which tries the case will doubtless so exercise its flexible jurisdiction in equity as to protect all rights and do justice to all concerned. The motion for leave to file a bill of review is

DENIED.

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SAME v. SAME.

(9 Wallace, 807.)

1. Where, on a bill by several persons for the infringement of a patent and for an account, (the defenses being invalidity of the patent and a license,) the court sustain the patent and decree damages, a bill cannot be regarded as a cross-bill which sets up a judgment in another suit against one of the complainants, and asks that the conjoined defendants in the principal suit set forth and discover what share of the damages they claim *respectively*, so that the defendant in that suit may set off his judgment as respects the one against whom it is.
2. As an original bill it cannot be sustained, if it have either been filed before the decree for damages was rendered in the principal suit, or have been a judgment in attachment only, and where there was no service on the person of the defendant.
3. A bill which is in nowise auxiliary to an original suit, nor in continuation of that proceeding, does not present a case proper for substituted service.

APPEAL from the Circuit Court for the District of Rhode Island.

Messrs. Payne, Cushing, and Parsons, for the appellant; and Mr. W. E. Curtis and Mr. Stoughton, contra.

Mr. Justice SWAYNE stated the case and delivered the opinion of the court.

After the interlocutory decree was entered in the case of Charles Goodyear, executor of Charles Goodyear, deceased, and others, against The Providence Rubber Company and others, in the Circuit Court of the United States for the District of Rhode Island, and while the case was before the master to whom it had been referred, the complainants filed this bill. It alleges that they hold a judgment against the estate of Charles Goodyear, deceased, in favor of E. M. Chaffee & Co., for the sum of \$48,215.20, amounting, with interest thereon, to \$72,215.20, or thereabout, which they insist ought, in equity and good conscience, to be offset against such portion of the damages to be recovered in the suit first mentioned as may be due and payable to Charles Goodyear, the executor. An exhibit is annexed to the bill and made a part of it, by which it appears that the judgment was recovered against Charles Goodyear, deceased, in his lifetime, by attachment; that process was not served upon him; that he did not appear; that he made no defense; that the cause of action was the alleged breach of a contract, and that the court assessed the damages for which the judgment was rendered.

It further appears by this exhibit that the firm of E. M. Chaffee & Co. consisted of Edwin M. Chaffee, George O'Bourne, and William W. Brown. The sheriff's return upon the writ of attachment is as follows:

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"For want of the body of the within-named defendant, to be by me found in my precinct, I have this day, at eleven o'clock a. m., made service of this writ by attaching two pieces grass cloth, one piece red fitting, six rolls cotton batting, one piece of perforated rubber cloth, one roll grass cloth, one roll sheeting covered with cotton batting, two bundles wadding, one piece bagging, set forth to me by the plaintiffs as the property of the defendant, and have left a true and attested copy of this writ, with my doings hereon, with Messrs. Bourne and Brown, in whose hands or possession I found said goods and chattels, the defendants having no last and usual place of abode within my precinct whereat to leave a copy."

The bill further sets forth that the Union India-Rubber Company claims to be a corporation of the State of New York, having its principal place of business in the city of New York, and that the Phenix Rubber Company claims to be a corporation of the State of Connecticut, having its principal place of business also in the city of New York.

The prayer of the bill is, that the defendants set forth and discover what share of the damages to be recovered in the prior suit they respectively claim; that the judgment may be set off against that portion which shall belong to Charles Goodyear, as executor of Charles Goodyear, deceased; and for other and proper relief. There is a further prayer that service of process may be made upon the corporation defendants, by serving it upon their solicitor of record, and that service may be made upon Charles Goodyear, the executor, by some disinterested person in the State of New York. Substituted service was made upon the corporations accordingly, pursuant to an order of the court. Charles Goodyear entered his appearance, and demurred. The corporations appeared specially, and moved to dismiss the bill. The demurrer and the motion were both sustained, and the bill was dismissed. The complainants thereupon appealed to this court.

In the argument here, the counsel for the appellants have endeavored to support the bill, upon the ground that it is a cross-bill, having for its object to enforce an offset arising under such circumstances as give a court of equity jurisdiction of the case, and authority to give the relief for which the bill specifically prays. A cross-bill is brought to obtain a discovery in aid of a defense to the original suit, or to obtain complete relief to all the parties as to the matters charged in the original bill. It should not introduce any distinct matter. It is auxiliary to the original suit, and a graft and dependency upon it. If its purpose be different from this, it is not a cross-bill, though it may have a connec-

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tion with the same general subject. *Mitford's Pleading*, 80, 81; *Ayres v. Carver*, 17 Howard, 591; *Cross v. De Valle*, 1 Wallace, 5. Here the original suit was for the infringement of a patent. The defenses were, invalidity of the patent and a license. Neither the case made by the bill nor the defenses set up in the answer had the slightest relation to the judgment in question. It is entirely foreign to the grounds of the controversy. Its only connection with the parties was that it belonged to the defendants, and was against the testator of one of the complainants. Any discovery in relation to it could not give or help any defense to the original suit. It was simply a fact affecting personally a portion of the parties, but no more affecting the litigation than would any other controversy between them as to lands, stocks, or other property. We therefore hold the bill to be an original and not a cross-bill.

Can it be sustained as such? When it was filed, no decree had passed in the original suit for the payment of damages. *Non constat* that such a decree would ever be made. It was possible that the court might annul the interlocutory order, decree for the defendants, and dismiss the bill. The bill before us was therefore prematurely filed. The judgment which it seeks to enforce was recovered in a proceeding by attachment. It did not affect the defendant personally, and bound no property but that upon which the grasp of the court was fixed by the service of the writ of attachment. Beyond that it was ineffectual for any purpose. An execution could not be issued upon it to reach other property, and it would not be *prima facie* evidence against the defendant in another suit upon the same cause of action. To enforce the contract against the testator while living, or his executor after his decease, it was necessary to sue, procure personal service, and make the same proofs as if the judgment in attachment had not been rendered. Such a judgment has no more efficacy and can no more be enforced in equity than at law. The demurrer of the executor was well taken and properly sustained. *D'Arcy v. Ketchum*, 11 Howard, 165; *McVicker v. Beeby*, 31 Maine, 314; *Story's Conflict of Laws*, § 314.

The motion to dismiss was made by the foreign corporations. The bill, being in nowise auxiliary to the original suit nor in continuation of that proceeding, the case was not one proper for substituted service. *Dunn v. Clark*, 8 Peters, 1. They were not bound to appear. They entered their appearance specially, and appeared only to object to the jurisdiction of the court.

The learned judge who heard the case below was correct in ordering the bill to be dismissed.

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BOURNE v. GOODYEAR.

(9 Wallace, 811.)

A proceeding to vacate the extension of a patent, of which the extension has expired before the proceeding was begun, has no equity to support it, and cannot be sustained on demurrer.

APPEAL from the Circuit Court for the Southern District of New York, in which court, on the 15th of June, 1865, a proceeding was begun, in the name of the United States, *ex relatione* Bourne, against the executor of Goodyear, to vacate an extension of a patent. The bill showed that the extension of the patent sought to be vacated by the proceeding expired on the 14th of June, 1865; before the suit was commenced, and the defendant demurred to it on that ground among others. The court below dismissed the bill, and the relator brought the case here.

Messrs. T. H. Parsons, A. Payne, and C. Cushing, for the appellant; Messrs. E. W. Stoughton and W. E. Curtis, contra.

The CHIEF JUSTICE delivered the opinion of the court.

The extension having expired before the bill was filed, there is no equity to support the application to set it aside. The extension has ceased to be of any effect, and there remains nothing which can be the subject of a suit. The demurrer to the bill, therefore, must be sustained, and the decree of the Circuit Court by which the bill was dismissed must be.

AFFIRMED.

BISCHOFF v. WETHERED.

(9 Wallace, 812.)

1. A judgment recovered in the Common Pleas, at Westminster, England, against a person in the United States, without any service of process on him, or any notice of the suit other than a personal one served on him in this country, has no validity here, even of a *prima facie* character.
2. On a suit at law, involving a question of priority of invention, where a patent under consideration is attempted to be invalidated by a prior patent, counsel cannot require the court to compare the two specifications, and to instruct the jury, as matter of law, whether the inventions therein described are or are not identical. The rule on the subject stated.

ERROR to the Circuit Court for the District of Maryland.

Bischoff and others brought an action, in the court below, against Wethered, to recover damages for breach of covenant in the assign-

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ment of one-fortieth part of an English patent granted to one Newton. The covenant was that the patent was in all respects valid and unimpeachable. The breach complained of was that it was null and void. The declaration contained certain other counts, namely, the ordinary money counts, and a count on a judgment recovered in the Common Pleas, at Westminster Hall, in England. To the latter count the defendant pleaded *nul tiel record*. The only evidence adduced in its support was an exemplified copy of a judgment recovered against the defendant in the said Common Pleas, without any service of process on him, or any notice of the suit, other than a personal notice served in the city of Baltimore, and as no evidence was adduced to sustain the common counts, the chief question in the case arose under the count on the alleged covenant, that the patent in question was valid and unimpeachable.

This patent was granted to Newton on the 25th of May, 1853, and was for certain improvements in the generation of steam, consisting of an accessory steam-pipe carried from the boiler through the fire or chimney, so as to cause the steam conveyed therein to become superheated; and from thence carried to the steam-chest, or to an intermediate pipe, there to connect with the ordinary steam-pipe which conveys the steam from the boiler to the engine, so as to mix the superheated steam with the ordinary steam as it comes from the boiler. The effect of this mixture is described to be that the superheated steam converts into steam all the remaining watery particles, froth and foam, contained in the ordinary steam, and thus dries and rarefies the whole mass, and makes it more effective.

The plaintiff having put in evidence the assignment containing the covenant declared on, and the letters patent granted to Newton, in order to show the breach of covenant, put in evidence a prior English patent granted to one Poole, in 1844, for an invention which the plaintiff claimed was identical with that patented to Newton. The plaintiff then called upon the court to compare the two specifications, and to instruct the jury that the patent to Newton was not a valid and unimpeachable patent, inasmuch as the invention therein described was not novel, but was already substantially described in the specification of Poole; and that under the covenants contained in the assignment, the plaintiffs were entitled to recover £500, the amount of purchase money paid, with interest. This the court refused to do, and the plaintiffs excepted.

The defendant then prayed the court to instruct the jury, amongst other things, that there is not on the face of the respective patents of Newton and Poole such an identity as authorizes the court to

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pronounce that they are for one and the same invention, and that for that reason the patent granted to Newton is invalid; and such invalidity being necessary to support the plaintiffs' claim, and being wanting, the verdict must be for the defendant. The court granted this prayer, and instructed the jury accordingly, and a verdict was found for the defendant. The plaintiffs excepted to this instruction. The case being brought here, the questions were—

1st (one not pressed.) What effect had the proceeding in the Common Pleas in England?

2d. The principal one—whether the court below was bound to compare the two specifications, and to instruct the jury, as matter of law, whether the inventions therein described were or were not identical?

Mr. W. M. Addison, for the plaintiff in error; Mr. J. B. Latrobe, contra.

Mr. Justice BRADLEY delivered the opinion of the court.

As to the first point raised—to wit, the effect of the proceeding in the Common Pleas at Westminster Hall—it is enough to say that it was wholly without jurisdiction of the person, and whatever validity it may have in England, by virtue of statute law, against property of the defendant there situate, it can have no validity here, even of a *prima facie* character. It is simply null.

The second and principal question in the case raises an important question of practice under the patent law, and deserves to be seriously considered by this court.

It is undoubtedly the common practice of the United States Circuit Courts, in actions at law, on questions of priority of invention, where a patent under consideration is attempted to be invalidated by a prior patent, to take the evidence of experts as to the nature of the various mechanisms or manufactures described in the different patents produced, and as to the identity or diversity between them; and to submit all the evidence to the jury under general instructions as to the rules by which they are to consider the evidence. A case may sometimes be so clear that the court may feel no need of an expert to explain the terms of art or the descriptions contained in the respective patents, and may, therefore, feel authorized to leave the question of identity to the jury, under such general instructions as the nature of the documents seems to require. And in such plain cases the court would probably feel authorized to set aside a verdict unsatisfactory to itself, as against the weight of evidence. But in all such cases the question would still be treated as a question of fact for the jury, and not as a

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question of law for the court. And under this rule of practice, counsel would not have the right to require the court, as matter of law, to pronounce upon the identity or diversity of the several inventions described in the patents produced. Such, we think, has been the prevailing rule in this country, and we see no sufficient reason for changing it. The control which the courts can always exercise over unsatisfactory verdicts will enable them to prevent any wrong or injustice arising from the action of juries; whereas, if the courts themselves were compellable to decide on these often recondite and difficult questions, without the aid of scientific persons familiar with the subjects of the inventions in question, they might be led into irremediable errors, which would produce great injustice to suitors. We are disposed to think that the practice adopted by our courts is, on the whole, the safest and most conducive to justice.

It may be objected to this view that it is the province of the court, and not the jury, to construe the meaning of documentary evidence. This is true. But the specifications of patents for inventions are documents of a peculiar kind. They profess to describe mechanisms and complicated machinery, chemical compositions and other manufactured products, which have their existence *in pais*, outside of the documents themselves; and which are commonly described by terms of the art or mystery to which they respectively belong; and these descriptions and terms of art often require peculiar knowledge and education to understand them aright; and slight verbal variations, scarcely noticeable to a common reader, would be detected by an expert in the art, as indicating an important variation in the invention. Indeed, the whole subject-matter of a patent is an embodied conception outside of the patent itself, which, to the mind of those expert in the art, stands out in clear and distinct relief, whilst it is often unperceived, or but dimly perceived, by the uninitiated. This outward embodiment of the terms contained in the patent is the thing invented, and is to be properly sought, like the explanation of all latent ambiguities arising from the description of external things, by evidence *in pais*.

We are, therefore, of opinion that the Circuit Court was justified in refusing to give the instructions demanded by the plaintiffs, and in giving that which was asked by the defendant.

The precise question has recently undergone considerable discussion in England, and has finally resulted in the same conclusion to which we have arrived. The cases will be found collected in the last edition of Curtis on Patents, § 446. It was at first decided in

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the cases of *Bovill v. Pimm*, 36 English Law and Equity, 441; *Betts v. Menzies*, 1 Ellis & Ellis, Q. B. 999; and *Bush v. Fox*, 38 English Law and Equity, 1; that it was the province and duty of the court to compare the documents and decide on the identity or diversity of the inventions. But in 1862, Lord Westbury, in two very elaborate judgments, one of which was delivered in the House of Lords on occasion of overruling the decision in *Betts v. Menzies*, held that it belonged to the province of evidence, and not that of construction, to determine this question. "In all cases, therefore," he concludes, "where the two documents profess to describe an external thing, the identity of signification between the two documents containing the same description, must belong to the province of evidence, and not that of construction." Lord Westbury very justly remarks, that two documents using the same words, if of different dates, may intend very diverse things, as, indeed, was actually decided by this court in the case of *The Bridge Proprietors v. The Hoboken Company*, 1 Wallace, 116. The court, in that case, said: "It does not follow that when a newly invented or discovered thing is called by some familiar word, which comes nearest to expressing the new idea, that the thing so styled is really the thing formerly meant by the familiar word." And the decision was that the word "bridge," in an old bridge law, passed in 1790, did not mean the same thing as the same word meant when applied to the modern structure of a railroad bridge.

This view of the case is not intended to, and does not, trench upon the doctrine that the *construction* of written instruments is the province of the court alone. It is not the *construction of the instrument*, but the *character of the thing invented*, which is sought in questions of identity and diversity of inventions.

JUDGMENT AFFIRMED.

STIMPSON v. WOODMAN.

(10 Wallace, 117.)

Where a roller in a particular combination had been used before without designs on it, and a roller with designs on it had also been used in another combination, it was not a patentable invention to place designs on the roller in the first named combination. Such a change, with the existing knowledge in the art, involved simply mechanical skill, which is not patentable.

ERROR to the Circuit Court of the United States for the District of Massachusetts.

Woodman sued Stimpson, in the court below, to recover damages

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for an infringement of a patent granted on the 29th March, 1864, for "a new and useful machine for ornamenting leather," as stated in the letters patent. In the specification the plaintiff stated that he has "invented a new and useful improvement in boarding or pebbling leather," and describes how this process was formerly carried on. He says:

"What is known as a boarded or pebbled grain or finish, has hitherto been given to leather by what is called the boarding operation, which consists in doubling the skin over on to itself, on a table, so that the flesh side shall be out, and then forcing or rucking one part over the other, in different directions, by means of a flat 'cork-board,' which breaks or wrinkles the grain, and gives it a rough, checkered, or pebbled appearance. This operation is performed by hand, and is very slow and laborious, and produces only one particular kind of finish."

He then observes:

"The nature of my invention, therefore, consists in producing this 'pebbled' or 'boarded' grain or finish on leather, by subjecting it to the pressure of a short revolving cylinder or roller of steel, or other suitable metal, having the required design or figure engraved or sunk on its periphery. . . . My improvement further consists in combining with said roller a certain new and useful combination of mechanical devices for carrying my invention into practical operation, so as to accomplish the object desired with great rapidity and cheapness."

He further observes:

"It is obvious that my 'pebbled' roller may be combined with various mechanical devices, whereby it can be rolled with sufficient pressure over a skin of leather. I will, however, now describe a combination of devices which I find to answer every purpose required."

The plaintiff then describes with great minuteness the machine, and every part of it, and closes with his claims:

"First. Boarding or pebbling skins or leather by means of a single short cylinder rolling over a table with the requisite pressure, substantially as described.

"Second. I also claim raising and lowering the table 'A' by means of the toggles 'Q,' arm 'S,' spring 'U,' arm 'T,' and cam 'P,' or their equivalents, substantially as set forth, and for the purposes described."

The second claim was not in the case, as the arrangement or con-

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trivance was not found in the defendant's machine. The first was the only one in question. That, as already stated, was "boarding or pebbling" skins or leather by means of a single short cylinder rolling over a table with the requisite pressure, substantially as described, which means, as this court stated that they understood the claim, finishing or figuring the leather, by means of a revolving roller, the design or figure engraved or sunk on its periphery, and worked over the grain of the leather by the use of the machinery described, or by machinery substantially like it.

It was admitted, in the bill of exceptions, that evidence was given on the trial, by the defendant, tending to show that prior to the plaintiff's invention, boarded or pebbled grain or finish, described in his patent as produced by him, had been produced on leather by subjecting it to the pressure of a short revolving cylinder of steel or other metal, having the required design or figure engraved or sunk on its periphery, and rolling over a table upon which the leather was placed; and that the said revolving figured cylinders, which are known in the case as "pebbling rollers," were operated with the requisite pressure by means of hand devices.

It was also admitted that the defendant gave evidence tending to show that prior to the plaintiff's improvement there was known and used a machine (made by one Green) which, in its substantial combination or arrangement of its parts, co-operating together for the purpose of impressing the surface of leather, differed in no material respect from the machine described in the letters patent, whereof a model was produced, except in respect to the mechanism for raising and lowering the table, (not in the defendant's machine,) and except that instead of operating a short revolving roller like the plaintiff's, having a figured surface for the purpose of producing the pebbled grain on leather, it operated a short revolving metallic roller, having a smooth surface, for the purpose of giving to the leather a closer natural grain; that this was the only diversity between the two machines, and that having the smooth roller instead of the roller with the ornamented surface, made no difference in the substantial combination or arrangement of machinery co-operating together in said machines for the purpose of doing the work.

On this case the defendant asked the court to instruct the jury as a second instruction, thus:

"If they find that the form of the surface of the rollers in the plaintiff's machine is not material to the mechanical action of the roller in combination with the other devices, and their arrangements, by which the roller is moved, the leather supported, and

Opinion of the court.

the pressure made; and if they find that before the plaintiff's invention a machine was known and used not differing substantially from the plaintiff's machine in any other respect, but having a roller for giving a finish to leather, the surface of which roller was different from that specifically shown and described in plaintiff's patent; and if they find that, before the plaintiff's invention, rollers having such a surface as the plaintiff's, substantially, were known and used in other machines for the same purpose, the plaintiff's patent for the first claim is void."

This was refused, and the jury found in favor of the plaintiff. The other side now brought the case here.

Messrs. B. R. Curtis and G. L. Roberts, for the plaintiff in error;
Mr. Wakefield, contra.

Mr. Justice NELSON delivered the opinion of the court.

Taking the evidence as stated in the bill of exceptions, it will be seen that the only difference between the prior machine and the plaintiff's, in its combination and arrangement, and in its working and effect upon the leather, is that the metallic roller in the former had a smooth, and in the latter a figured surface. In all other respects the two machines were the same. But, as also appears in the bill of exceptions, this figured revolving roller was old, and the use of it in pebbling leather was also old and well known. Neither the plaintiff nor the defendant could claim any right to it as inventors. The same pebbled grain or finish, as described in plaintiff's patent, had already been produced on leather by subjecting it to pressure while rolling over the table on which the leather was placed. But this pressure was produced by means of hand devices. The field of invention was open to any person to construct new devices or machinery by means of which to operate this old instrument in "pebbling leather"—in the language of the patentee in this case, "so as to accomplish the object desired with greater rapidity and cheapness." And this the plaintiff would have accomplished by his machine if he had not been anticipated. But the case admits that evidence was given tending to show that the device or machine he has patented for the purpose, so far as used by the defendant, was the same as the Green machine, which was prior in date.

The prayer for the second instruction to the jury prayed for by the defendant is somewhat involved and obscured by too much verbiage; but when analyzed and understood, it was clearly warranted and supported by the evidence, and should have been given.

Opinion of Clifford, J., dissenting.

In substance it is, if the jury should find that the figured roller in the plaintiff's machine was not material to the mechanical action of the roller in the combination and arrangement of the machinery by which it was moved, the leather supported, and the pressure made; and if they find that before the plaintiff's a machine was known and in use similar to his, except that the surface of the roller was smooth; and if they find that before the plaintiff's invention figured rollers were known and used in other machines for the same purpose, then the plaintiff's first claim was void. In other words, and, in short, if the plaintiff's machine had been anticipated in every part of its construction except the figures or designs on the roller, which roller was old, he was not entitled to recover. This instruction was refused, which, for the reasons already stated, we think was error.

There is also another ground upon which we think this instruction should have been given. Assuming the plaintiff to have been anticipated in the construction of his machine in every part of it, except that the prior machine used a smooth revolving roller, and the plaintiff a figured one, but which figured roller had been used for pebbling leather by pressure, and was well known, all of which the jury would have been warranted in finding, the engraving or stamping of the figure upon the surface of the smooth roller, or the substitution of the old figured roller for the purpose, required no invention; the change with the existing knowledge in the art involved simply mechanical skill, which is not patentable.

JUDGMENT REVERSED. VENIRE DE NOVO.

Mr. Justice CLIFFORD, dissenting.

Inventions secured by letters patent are property, and as such they are under the protection of the Constitution of the United States and the laws of Congress. When duly secured in that way the patentee acquires the exclusive right, if the invention is a machine, to make and use the same and to vend it to others to be used during the entire term for which it was granted, as provided by law. Vested with that exclusive right he may have an action on the case to recover damages against any person who infringes his exclusive right; and on the trial of the case, to the jury he may introduce his letters patent in evidence, and when so introduced the letters patent afford a *prima facie* presumption that the patentee is the original and first inventor of what is therein described as his improvement; and the defendant, if he denies that proposition, takes the burden to establish the affirmative of the general

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issue or of the notices filed in that behalf. *Agawam Co. v. Jordan*, 7 Wallace, 596.

Letters patent bearing date the twenty-ninth of March, 1864, were granted to the plaintiff for a new and useful improvement in boarding and pebbling leather, which, as described; consists in giving to the surface of the leather a checkered or pebbled appearance by subjecting the leather on the finished side to the pressure of a short, engraved revolving cylinder or roller, made of steel or other suitable metal, having the required design or figure engraved on the periphery of the device. My improvement, says the patentee, consists in combining with said roller a certain new and useful combination of mechanical devices for carrying my invention into practical operation, so as to accomplish the object desired with great rapidity and cheapness.

Nothing can be plainer than is the meaning of those two passages in the specification, the substance of which is here reproduced. In the first passage he describes the result or effect which his invention will produce, and in the second he gives a terse general description of the invention itself, alleging that it consists in combining with the roller a certain new and useful combination of devices to accomplish the work. Had the patentee stopped there the specification might perhaps have been regarded as wanting that full, clear, and exact description of the invention which is required by the sixth section of the Patent Act. 5 Stat. at Large, 119.

But the patentee did not stop there, as fully appears by what immediately follows in the specification. On the contrary, he gives a minute description of the roller, and then proceeds to describe the several mechanical devices to be combined with the roller, and which, as he says, will answer every purpose to produce the required effect; and in conclusion he gives a minute description of every element composing the organized machine described in the patent as it was issued.

Exact description is also given of the several devices composing the apparatus for raising and lowering the table on which the leather is placed as it is subjected to the operation of the pebbling instrument. Such an apparatus is essential to the effective operation of the machine, as the table must be raised in order that the leather may be subjected to the pressure of the roller or pebbling instrument as it passes over the upper surface, and it must also be lowered in order that the arm to which the pebbling instrument is attached may pass back, and it is obvious that the contrivance is ingenious and useful.

What the patentee claims is as follows: First, boarding or peb-

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bling skins or leather by means of a single short cylinder rolling over a table with the requisite pressure *substantially as described*. Striking out the word substantially as described, it might be contended that the claim is for the effect and not for the means by which the effect is produced, but such a construction cannot be maintained for a moment, as it would be contrary to the settled rules of law everywhere applied in such cases.

Patents for inventions are not to be treated as mere monopolies, and therefore as odious in the law, but they are to receive a liberal construction, and under a fair application of the rule that they be construed *ut re magis valeat quam pereat*. Hence where the claim immediately follows the description, it may be construed, says Curtis, in connection with the explanations contained in the specification, and be enlarged or restricted accordingly. *Curtis on Patents*, § 225; *Turrill v. Railroad*, 1 Wallace, 510; *Ryan v. Goodwin*, 3 Sumner, 520.

Construed in view of that rule, it is clear to a demonstration that the first claim of the patent is for the means described in the specification for accomplishing the effect, which is the exact view taken of the claim by the presiding justice in the court below.

Strike out the second claim and it might be contended that the first claim covers the whole invention, including the apparatus for raising and lowering the table as well as the combination of devices for pebbling the leather, but the whole specification must be construed together, and when so construed it is clear that the claims were intended to be distinct, as the second claim not only specifies the "raising and lowering of the table," but it also includes by name every one of the described devices to perform that office.

Giving due weight to these considerations, it is as clear as anything can be that the first claim of the patent is a claim for a combination of the described mechanical devices, with the roller for carrying the invention into practical operation, and for accomplishing the described result by the described means, excluding the apparatus for raising and lowering the table, which is included in the second claim. *Le Roy v. Tatham*, 22 Howard, 132.

Influenced by these considerations I dissent from the opinion of the court, because it adopts an erroneous construction of the patent, and one utterly at variance with the whole tenor of the specification and the language of the claim.

Some attempt was made at the trial to show that the invention of the plaintiff was superseded by the machine of Garnar, or by that of Green, but the attempt was an utter failure, and the jury found

Opinion of Clifford, J., dissenting.

the issue in favor of the plaintiff. Questions of fact are certainly for the jury, and it is too plain for argument that the finding of the jury cannot be revised here under a bill of exceptions. Suppose, however, it were otherwise, still it would be impossible to come to any other conclusion than that their finding is right.

Take the Garnar machine, which is the first in order as the evidence is exhibited in the bill of exception. Evidence was introduced by the plaintiff, showing not only that the machine differed from the machine of the plaintiff, but that it operated in a substantially different manner, and produced a substantially different effect upon the leather, which must be obvious, upon comparing the two machines, to every one having any acquaintance with the subject. Equally decisive evidence was also introduced by the plaintiff showing that the Green machine did not supersede his patent. Among other things the plaintiff proved that the figuring instrument described in that patent was not a revolving instrument, but an instrument for rubbing the leather, as appears by the model; that the adaptation of the pebbling roller to that machine, so that the same could be practically used therein, would require invention and was not within the common knowledge and skill of a mechanic, and that a figured, rotating cylinder, such as is described in the plaintiff's patent, had not in fact been introduced and operated in that machine prior to the plaintiff's invention.

Remark upon the question of infringement is not necessary, as that issue was found by the jury for the plaintiff, and there is no exception calling for any review of the instructions given by the court.

Suggestion is made in the opinion just read that perhaps the judgment might be reversed upon the ground that the invention was not patentable. *Many v. Jagger*, 1 Blatchford, 372; *Wilbur v. Beecher*, 2 Id., 132. Patented inventions which are not new and useful, or which did not require any invention as compared with what existed, and was in use before, may doubtless be held invalid on that account, but the question whether a particular invention is new and useful, or whether it did require any invention to produce it, as compared with what existed before, are everywhere admitted to be questions of fact for the jury, and certainly no such question is open here for the determination of this court under this bill of exceptions. *Curtis on Patents*, § 41; *Lowell v. Lewis*, 1 Mason, 182; *Winans v. Railroad*, 2 Blatchford, 297; *Bedford v. Hunt*, 1 Mason, 302; *Hall v. Wiles*, 2 Blatchford, 194. Such a remark cannot have been well considered, as the authorities are all the other way; but

Syllabus.

if it were otherwise the bill of exceptions shows that the finding of the jury was right, as it appears that the pebble finish can be made cheaper and better by the plaintiff's machine than by any other machine or instrument known in the trade, which is a complete answer to both suggestions.

Valuable as the property of the plaintiff in this invention is, I cannot concur in the judgment which assigns it to an infringer. Most modern patents are for new combinations of old elements, just like the present one, but many of them are of great utility, and they are as much within the protection of the patent law as those of any other class. *Union Sugar Refinery v. Matthiessen*, 2 Fisher, 605. Such patents being for the combination only, no one can be held liable for infringing the invention, unless it be shown that the infringer uses all of the elements which compose the combination, showing that the public have the most ample security that nothing will be protected by the patent, except what was in fact invented by the patentee. *Prouty v. Ruggles*, 16 Peters, 341; *Carver v. Hyde*, Ib., 520; *Stimpson v. Railroad*, 10 Howard, 346; *Barrett v. Hall*, 1 Mason, 477; *Howe v. Abbott*, 2 Story, 194.

Where an invention is for distinct combinations which are separable, and where it embraces two distinct improvements, one having respect to the operative part of the machine and the other to the motive power, it is entirely competent for the Commissioner to grant separate claims for the two combinations in the same patent, or he may, under existing laws, grant separate patents for each combination, if it is new and produces a new and useful result.

Two combinations are embraced in this patent: one consisting of a combination of certain described mechanical devices with the roller to do the work of pebbling the leather, the other consists of the described combination to raise and lower the table; and the one last named is admitted to be new and useful, and therefore valid, but the opinion of the court surrenders the first one to infringers, and of course the property of the inventor is rendered of no value.

CLARK v. BOUSFIELD.

(10 Wallace, 133.)

A claim for arranging an elastic bed for printing designs, is not a claim for a design under the eleventh section of the act of March 2d, 1861, entitled "An act in addition to an act to promote the progress of the useful arts"—but is a claim for a device.

Statement of the case.

ON certificate of division between the judges of the Circuit Court for the Northern District of Ohio, the case being this:

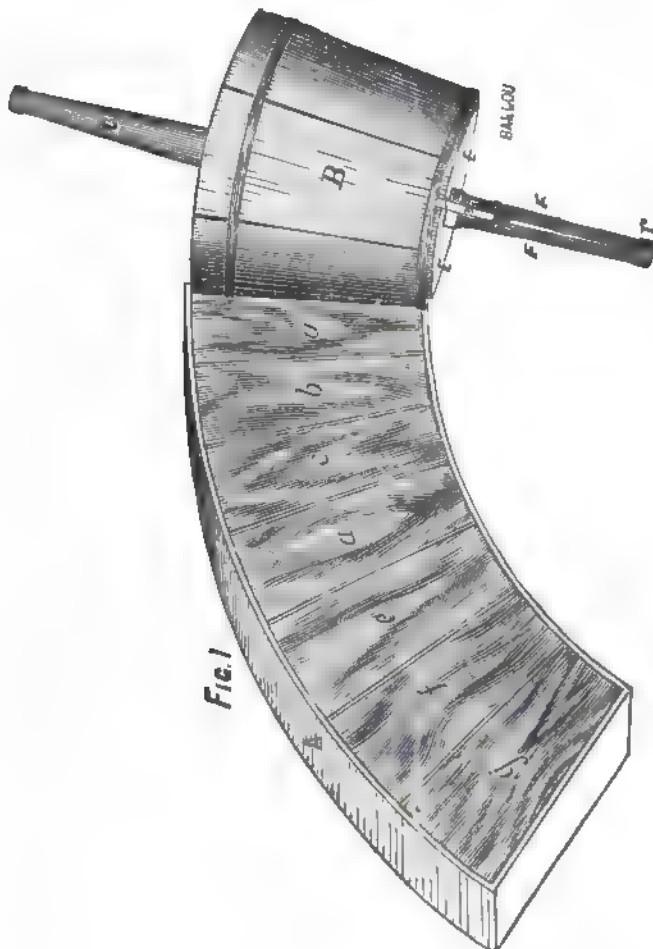
The Patent Act of July 4th, 1836, "to promote the progress of the useful arts," authorized the patenting of any "new and useful art, *machine*, manufacture, or composition of matter," and gives an exclusive right to the patentee for a term of fourteen years, with a privilege of renewal for seven in certain cases, but this act did not allow a patent for mere *designs*.

The eleventh section of an act of March 2d, 1861, entitled "An act in addition to an act to promote the progress of the useful arts," extends this privilege of patent. It secures to the inventor or producer of any original *design*, &c.; or any new and original impression or ornament, to be placed on any article of manufacture, &c.; or any new and useful pattern, or print, or picture, to be either worked on, or printed, or painted on any article of manufacture; or any new and original shape or configuration of any article of manufacture, not known or used before, &c., a patent for the exclusive property therein; and it gives this right for a term of years, different from the term granted by the act of 1836 to the inventor of a *machine*, &c.

With both acts in force, R. & A. Cross obtained, December 27th, 1864, a patent for a new and useful improvement in machines for graining pails, and other analogous uses. [See the diagram, page 269.] The nature of it, as declared by them in the schedule to the letters patent, consisted in constructing an elastic bed, containing the impression or impressions of the device to be grained upon the pail, in separate panels, each panel to be of different design, so that by moving the pail over the same the various designs would be stamped upon the pail, thus producing a pail whose staves were painted in imitation of different kinds of wood. The patentees then described the instrument or machine, which they stated to be a box, into which the elastic material, with the required designs to be grained upon the pail, is placed, and which might, according to their statement, be constructed of wood or iron, or any other suitable material, and so shaped (describing the shape minutely) that when the pail was adjusted properly upon the bed, and rolled upon and over it, the upper or larger end of the pail should follow the outer curve of the bed, and the lower or smaller should follow the interior or smaller curve with exactness and precision. "The elastic bed," they say, "may present one continuous or uniform design if desired, or it may be arranged in blocks or staves, each of different designs, so that the pail grained thereon or thereby shall present the appearance of being constructed of different kinds or

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species of wood. The elastic bed may be composed of any suitable impersible material, as rubber or leather; but a compound of glue and molasses, such as is used for printers' rollers, is preferred."



The patentees then described the contrivances for *working* the elastic bed in connection with the pail, so as to effect the graining of the latter. By this contrivance the pail, they state, is readily rolled by hand across the bed, leaving upon it the desired design or figure, or the pail may be suspended on handles, and the elastic bed itself moved beneath it, in a suitably arranged groove or track, producing the same result.* The patentees then set forth their claims, the first two of which only are material:

* The reader to whom the foregoing description of the instrument and of its mode of

Statement of the case.

First. "We claim constructing the bed of the elastic material used in graining machines, in the form herein shown, substantially as and for the purposes specified."

Second. "We claim arranging the elastic material aforesaid, whether curved or rectangular in form, in a series of distinct staves or designs, substantially as and for the purposes herein shown and set forth."

On a suit below, by Clark and others, assignees of Cross, the patentees, against one Bousfield, for infringement, it was suggested on behalf of the defendant that the second claim was for nothing more or other than a *design* to be impressed on the bed: and if this was so, that the claim would be void, as a patent could not properly contain a valid claim for a machine, and contain also a claim for a design; that the two things were patentable under different acts and for different terms of time.

The judges of the Circuit Court were accordingly divided upon the question whether this second claim in said letters patent was for anything patentable other than under the already mentioned

operation may not be sufficiently specific, may derive more precise ideas from the following account, referring by letters to the different parts of the invention:

DESCRIPTION OF THE INVENTION.

A, a box or bed into which the elastic material, impressed with the required designs to be grained upon the pails, is placed or framed.

a, b, c, d, e, f, g. Blocks or staves, each of different designs, into which the elastic bed may be arranged, so that the pail or vessel grained shall present the appearance of being constructed of different kinds of woods, as rosewood, oak, walnut, and others; this in case only, however, that the manufacturer does not prefer one continuous design.

C, E. and *F*, the handles and other devices for affixing or attaching the handles *C* and *F* to the pails, to facilitate the operation of graining.

EE, a circular plate divided in two parts, to each of which is rigidly attached the handles *FF*.

The handles *FF* are connected by a hinge at *h*, and between them is arranged a spring *s*, to throw said handles apart when not confined by the ring *r* upon the ends of the same.

MODE OF OPERATION AND APPLICATION.

The ring *r* being removed from the end of the handle *FF*, the opposite ends thereof approach each other, being forced together by the operation of the spring *s* and hinge *h*; and thus the two parts of the plate *EE* are drawn together, diminishing its size, so that it can be introduced within the chime of the bottom of the pail, when by pressing the ends of *FF* together and replacing the ring *r*, the plate *EE* is expanded and adjusted within said chime so as firmly to fasten the handle *F* to the pail. The handle *C* is then inserted and adjusted within the pail, when the operator grasps the handles *CF*, and adjusts the pail upon the elastic bed, as shown; the paint or coloring matter having been previously applied thereto by means of a roller, or in any other suitable and convenient manner. The pail is then readily rolled across the bed and grained.

Argument for the infringer.

section eleven of the act of March 2d, 1861? And if not, whether the patent was not void?

Messrs. J. Canfield and A. G. Riddle, for the plaintiff:

We admit that if this second claim is, in substance, a claim for a design, instead of a claim for a principle in an apparatus, it should have been patented under the act of 1861; but if it is for a principle in an apparatus, then we assert that it does not come under the act of 1861, but under the act of 1836. Now Judge Grier, in *Corning v. Burden*, 15 Howard, 263, has thus defined the principle patentable as a machine:

"It is for the discovery or invention of some practicable method or means of producing a beneficial result, or effect itself. It is when the term process is used to represent the means or method of producing a result, that it is patentable; and it will include all methods or means which are not affected by the mechanism or mechanical combinations. But the term process is often used in a more vague sense, in which it cannot be the subject of a patent; thus, we say that a board is undergoing the process of being planed, grain of being ground, iron of being hammered or rolled. Here the term is used subjectively or passively, as applied to the material operated on, and not to the method or mode of producing that operation, which is by mechanical means or the use of a machine, as distinguished from a process. In this use of the term it represents the function of a machine, or the effect produced by it on the material, subjected to the action of the machine. But it is well settled that a man cannot have a patent for the function or abstract effect of a machine, but only for the *machine* which produces it."

This language is both concise and correct, and, tested by it, our second claim is for the machine which produces the effect, and not for the effect itself. In other words, it is for the machine which grains a pail in staves, which staves represent different kinds of wood, and not for the impression upon the pail, representing staves of different kinds of wood. The means of producing this effect on the pail is our machine, which comes under the act of 1836; the effect as produced is a design, which comes under the act of 1861, and for which we claim nothing.

Mr. George Willey, with a printed brief of Messrs. George Willey, John E. Carey, and H. S. Sherman, contra:

The nature and object of the invention, as stated in the specification, contemplated a design and the construction of a bed cor-

Opinion of the court.

responding with the shape of the design, but as an obvious sequence or incident of the design. Nothing is claimed on the material, or box or bed or its material, nor as to form could anything be claimed in the way of invention, inasmuch as it involves the mere measurement of surface—the simplest of mechanical operations. Then it says, "the elastic bed may present one continuous or uniform *design* if desired, or it may be arranged in blocks or staves, each of different designs," meaning block or stave designs. Again, it speaks of "different *designs* arranged in staves," which is but another form of representing stave *designs*. Again, it speaks of the "pail being rolled across the bed and grained in staves in imitation of various woods or marbles." The specification does not say, series of separate pieces or blocks, but a "series of distinct staves or *designs*," and the specification speaks of "different *designs* arranged in staves, impressed upon a single united mass, so as to produce the same effect as when constructed in separate blocks," evidently treating staves and designs as synonymous or convertible, the word "staves" meaning stave designs. So that from all these considerations it is obvious that stave designs impressed on a bed, whether curved or rectangular, for the purpose of transferring said stave designs to a pail or "other analogous uses," or to rectangular objects, is the substantial object or meaning of this second claim. If this be so, then the doubt suggested below is well founded, and the plaintiff has no valid patent.

Mr. Justice NELSON delivered the opinion of the court.

It will be seen by reference to the eleventh section of the act of 1861, that if the second claim is patentable under this section, it must be a claim for an original design or impression, or ornament, or pattern, or picture, and the like, wholly irrespective of the means of producing it. The patent is simply for the design, &c., itself.

In order to understand the full meaning of this second claim, it will be useful to settle the meaning of the first, as the two are intimately connected.

The first, as we have seen, is for constructing the bed for the elastic material used in graining machines in the form shown and for the purposes specified. The patentees describe it as a box or bed, and which may be constructed of wood or iron, or of any other suitable material. This box or bed is made for the purpose of holding the elastic material, whether of rubber or leather, or the compound of glue and molasses, which is preferred. Now, the second claim is for arranging the elastic material, when placed in this box or bed, whether curved or rectangular in form, "*in a*

Opinion of the court.

series of distinct staves or designs," for the purpose specified—that is, for the purpose of graining pails in the variety of colors or figures described. The elastic bed may be arranged, as is stated in the specification, so as to present one continuous or uniform design, or it may be arranged in blocks or staves, each of different designs, so that the vessel shall present the appearance of different kinds of wood—as rosewood, oak, walnut, and others. It may also be constructed of separate pieces or blocks, as shown in the drawing, or the material may be a single united mass, impressed by different designs arranged in staves, so as to produce the same effect as when constructed in separate blocks. The two claims, as we see, are closely connected, and each essential to the complete construction of the instrument or apparatus, which, when put into practical operation by the contrivances pointed out in the specification, can accomplish the desired result, which result is the graining of the exterior body of the pail with a variety of colors and figures.

The learned counsel for the defendants below insists that this second claim is only an arrangement of designs, and, in a limited sense, he is no doubt right, but in its connection with the first claim, and with the machine for transferring the design to pails, it is more; it is a part of the machine or instrument, and an indispensable part; it is the elastic bed of rubber, or of leather, or compound of glue and molasses, of any arranged figure or design, that constitutes an element in the machine, and which, with the curved box and contrivances for working the instrument, produces the desired result. The figure or design is but incidental, and, as such, has no other protection than that which the patent secures to the inventor of the machine. The right to the use of the machine carries along with it the right to use the designs.

The arranged figure in the elastic bed is not the one protected by the eleventh section of the act of 1861; that is the one which is transferred to the pail or wares, where its beauty is first visible to the eye. While it remains in the elastic material it exhibits no more beauty than if engraved on stone or metal.

It may be that the inventors of the machine for impressing figures or designs upon pails or other wares would not be protected from using figures or designs, the right of property in which had been secured to the original inventor under this eleventh section, but they may clearly use any and all not thus protected. The machine in question is invented for reducing to practical use these figures and designs, and will make them profitable to the original inventors or owners of them, if they choose to employ it.

Statement of the case.

We are of opinion that the first question should be answered in the affirmative and the second in the negative.

RAILROAD COMPANY v. TRIMBLE.

(10 Wallace, 367.)

1. A deed by which a party conveys "all his property and estate, whatsoever and wheresoever, of every kind and description," carries patent rights and extensions, if the party own any.
2. A decree in equity in one of the loyal States against a party who, having been engaged in the rebellion, was at the time a prisoner of war of the United States, outside of the State, and against whom there was no service of process, or any step taken to bring him before the court, is void; and any sale under it is also void.
3. Where there is doubt as to the proper meaning of an instrument, the construction which the parties to it have themselves put upon it, is entitled to great consideration; but where its meaning is clear, an erroneous construction of it by them will not control its effect.
4. A deed by which a patentee of an invention conveys all the right, title, and interest which he has in the "said invention," as secured to him by letters patent, and also all "right, title, and interest, which *may* be secured to him from *time to time*," the same to be held by the assignee for his own use and for that of his legal representatives, "to the full end of the term for which said letters patent *are or may be* granted," carries the entire invention and all alterations and improvements, and all patents whensoever issued and extensions alike, to the extent of the territory specified.
5. A grant by a patentee of an extension of a patent, before any extension has issued, will carry, if the terms of the grant be proper ones, the legal as well as the equitable interest in the patent.
6. Where the owner of a patent granted the portion of his interest in it to another person in consideration of certain payments to be made by such person to third parties, and certain promises and agreements then made by him; and such person, never made any of the payments which he was thus required to make, and by common consent of the grantor and grantee, the contract never went into operation in any way, because the grantee was unable to comply with any of his engagements, so that the grantor was compelled to pay, and did pay, the money which the grantee had agreed to pay; and the grantee during his lifetime never claimed any interest in the contract, but, on the contrary, always recognized the grantor's exclusive right, and acted as his agent in the patent, under a power of attorney, paying him a part of the profits for the privilege:
Held, after the grantee's death, that the agreement did not prevent the grantor's bringing suit for the infringement of the patent without naming the grantee.

ERROR to the Circuit Court for Maryland, the case being thus:

The Patent Act of 1836 (5 Stat. at Large, 121, 123) thus enacts:

"*Section 11.* That every patent shall be assignable in law, either as to the whole interest or any undivided part thereof, by any instrument in writing; which assignment, and also every grant and

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conveyance of the exclusive right under any patent to make and use, and to grant to others to make and use the thing patented within and throughout any specified part or portion of the United States, shall be recorded, &c.

Section 14. Damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought in the name of the person or persons interested, whether as patentees, assignees, or grantees of the exclusive right within and throughout a specified part of the United States."

Section 18 of the act authorizes, under certain circumstances, an extension of the patent beyond the term of its limitation, and thus continues:

"And thereupon the said patent shall have the same effect in law as though it had been originally granted for a term of twenty-one years. And the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented to the extent of their respective interest therein."

These statutory provisions being in force, a certain Howe obtained, on the 3d of August, 1840, a patent for an improvement in the manner of constructing the truss frame of bridges. He had previously, on the 10th of July, of the same year, obtained a patent on the same account, which was merged practically in that of August 3d. On the 9th of July, 1844, he assigned to one Isaac R. Trimble all his right in these two patents for certain States, including Maryland. This assignment (duly recorded) conveyed Howe's rights in these words:

"All the right, title, and interest which I have in *said invention*, as secured to me by said letters patent; and also all right, title, and interest which *may* be secured to me for *alterations and improvements* in the same *from time to time*; . . . the same to be held and enjoyed by the said I. R. Trimble, &c., to the full end of the term for which said letters patent are or *may* be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not have been made."

Afterwards, on the 28th of August, 1846, another patent was granted to Howe, for an *improvement* in the manner of constructing these truss frames; and on the 18th of September, 1854, Howe having died meanwhile, his administrator, one Joseph Stone, in order to "secure to I. R. Trimble more perfectly his legal rights, and tend to a more speedy adjustment of any disputed claim," assigned to Trimble the same interest in the patent of 1846 which he held in the others. The assignment recited that the alterations

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and improvements secured by the patent of 1846 already belong to Trimble, "who has used and paid for the same since the year 1846, as understood at the time."

On the application of the same administrator, Stone, the patent of 1846 was extended for seven years from the 28th of August, 1860.

On the 30th of May, 1861, Trimble executed a deed, duly recorded, of "all his property and estate, whatsoever and wheresoever, of every kind and description," to Anne Trimble (his wife) and Georgiana Presstman, in trust, &c.

The Philadelphia, Wilmington, and Baltimore Railroad Company, during the years 1864, 1865, and 1866, that is to say, during the term of the extension, having built certain bridges in Maryland, adopting Howe's improvement, Trimble, his wife, and Presstman brought suit for damages. Plea not guilty, &c. There was no question as to the validity of the patent, the only point being whether the assignment of July 9th, 1844, from Howe to Trimble, passed Howe's interest in the extension of 1846.

The plaintiffs having put the case, as already stated, before the jury, the defendant gave in evidence an assignment dated April 1st, 1861, from Howe's administrator, Joseph Stone, to a certain Daniel Stone, of Philadelphia, of all the administrator's interest in the patent of 1846, and its extension, for the State above mentioned. This was followed by proof of an agreement between Trimble and Daniel Stone, dated 30th September, 1846. This agreement, which was not recorded until July 27th, 1864, and after Stone's death, which event took place in December, 1863, recited the agreement between Trimble and Howe, and the payments thereby stipulated to be made by Trimble. Stone covenanted to pay one-half of the installments still unpaid as they should mature.

This clause follows:

"And the said Isaac R. Trimble, in consideration of the said *payments, promises, and agreements* on the part of the said Daniel Stone as aforesaid, for and on the part of himself, the said Isaac R. Trimble, and his heirs, executors, and administrators, covenants and agrees, and by these presents doth covenant and agree, to sell and transfer, and doth hereby sell and transfer unto the said Daniel Stone, his heirs, executors, and administrators, the *one equal moiety* or half part of all the right, title, claim, and interest of him, the said Isaac R. Trimble, of, in, and to the patent right aforesaid, which he purchased as aforesaid of the said William Howe."

A copartnership between the parties in the business of building

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bridges under Howe's patents was then made by the agreement, and it was stipulated that if either party should at any time desire a dissolution, Trimble should name a sum which he would be willing to give or take for a moiety of the rights which he acquired from Howe, including the payments to Howe, and that Stone should thereupon decide whether he would buy or sell; and, further, that the contract might be dissolved at the expiration of six months after notice from either party.

The defendants then gave in evidence a transcript of the record in an equity proceeding in the Supreme Court of Pennsylvania, instituted March 10th, 1864, by this same Joseph Stone, administrator of Daniel Stone, against Trimble, as "formerly of said city of Philadelphia." It alleged a partnership between Daniel Stone and Trimble, and that the same was carried on in Philadelphia, and it produced what it charged was a copy of the articles of partnership of September 30th, 1846. It then charged that Trimble, "on or about the 29th day of April, 1861, absconded to parts unknown, abandoning the said copartnership business, and took up arms against the government of the United States, became a major general in the so-called Confederate States army, was afterwards captured, and is now held at Johnston's Island, on Lake Erie, as a prisoner of war by the United States." It further charged that since April 29th, 1861, Trimble had taken no part in the management of the partnership business; that Daniel Stone died on November 26th, 1863, and that the complainant had administered on his estate; that no settlement of the business had ever been had; that a large amount was due from Trimble to Daniel Stone's estate; that the assets of the firm consisted in part of an interest in Howe's patents, *which had been extended for seven years from August 28th, 1860*; that great loss would result from lapse of time and non user, &c., unless the rights of the copartnership should be disposed of, &c. The bill then required the defendant to answer as to whether "the property of the partnership does not principally consist of a partial right under letters patent originally granted to Howe, on the 28th of August, 1846, and afterwards extended for seven years from the 28th of August, 1860;" and it prayed an account, injunction, receiver, &c., and a subpoena against Trimble. It was sworn to by Joseph Stone. No subpoena was ever issued, but on the production of two affidavits, sustaining the allegations of the bill as to Trimble's having gone into the Confederate army, and being then in prison at Johnston's Island, the court, March 26, 1864, sixteen days after the filing of the bill, appointed one John E. Shaw receiver, and ordered him to sell the

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partnership property. He filed an inventory, in which the Howe patent, as extended, was set down as the only assets of the partnership, and a sale of it for \$300, to one Burton, was reported. He then filed a petition for the confirmation of the sale of the patent and extension to Burton, and on June 11th, 1864, the sale was absolutely confirmed, and the receiver directed to execute the assignment to Burton of the Howe patent "to the full end of the time for which said letters patent have been extended."

[The articles of copartnership between Trimble and Stone, filed by the complainant, in the equity suit in Pennsylvania, as an exhibit with his bill, though in all other respects identical with the instrument filed in the Patent Office, and produced by the defendants on the trial, did not contain the words of actual sale, which were contained in the latter instrument, to wit: the words, "*and doth hereby sell and transfer,*" but confined themselves to an agreement to sell.]

Next followed an assignment dated June 11th, 1864, from this Shaw, receiver, to Burton, of all the interest of Daniel Stone and Trimble, as partners in the Howe patents.

Next was produced an assignment from Joseph Stone, administrator of Daniel Stone, to the same Burton, dated March 6th, 1865, in which he transfers to the assignee all the interest of the deceased in the Howe patents and extension.

The plaintiffs, by way of rebutting evidence, then proved by Trimble that Daniel Stone never made any of the payments stipulated to be paid by him in the agreement offered in evidence by the defendant; that by common consent, the agreement never went into operation in any way, because Stone was unable to comply with any of his engagements made in said agreement, and left their witness to pay, and the witness was compelled to pay, the installments still due on the original purchase, which the witness himself did; that Stone never claimed any right or interest whatever during his life under that agreement, nor did he ever pretend to act under it; but, on the contrary, always recognized the witness's exclusive right to the interest referred to in said agreement, and acted as the witness's agent under a power of attorney, in constructing bridges thereunder, paying the witness a part of the profits as a compensation for the privileges. The witness further proved that he never was a resident or citizen, nor were any of the plaintiffs, at any time, residents or citizens of Pennsylvania.

The evidence being closed, the plaintiffs presented their prayer for instructions, as follows:

"That if the jury believe, that the agreement offered in evidence

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by the defendant, executed by and between Trimble and Daniel Stone, and bearing date the 30th September, 1846, never went into effect and operation between the parties thereto, because of the inability and failure of the said Stone to comply with the terms thereof on his part, and that the partnership therein contemplated was, for the same reason, abandoned by the common consent of the said parties; and the said agreement was held and treated by and between them, in all particulars, as inoperative and of no effect; and further believe that the said Trimble, by reason of the failure of said Stone to pay the moneys due on the purchase of the original patent, as in said agreement stipulated, was compelled to pay, and did pay, the same altogether himself; and that said Stone always, after the execution of the said agreement, and notwithstanding the same, recognized the said Trimble as the sole owner of the patent right therein referred to, and acted only as his agent and attorney in regard thereto, and in recognition of his sole right therein, and not otherwise, and never caused or procured or intended the said agreement to be recorded, but died in 1862 or 1863, before the recording of the same, and without setting up the same or pretending to have acquired any rights thereunder, then the said agreement is not to be regarded by the jury as passing any right or title to the said Stone, which the defendant is entitled to set up in connection with any other evidence in the cause, as a bar to the right of the plaintiffs to recover; provided the jury find the execution and delivery to the plaintiffs, Ann Trimble and Georgiana Presselman, of the deed of the 13th of May, 1861, produced by the plaintiffs, and that the same was recorded," &c.

This instruction the court gave.

The defendant presented eight prayers, of which the court granted the first and seventh, and refused the rest.

The second was to the effect that Trimble did not acquire by Howe's assignment, or that of his administrator, a legal title to the extension of the patent, and that the deed of trust executed by Trimble passed no legal title to the grantees.

The third maintained that the articles of copartnership between Trimble and Stone passed Trimble's title to a moiety of his interest in the patents, and that in the absence of any proof of a reconveyance in writing Trimble had no exclusive legal right in the extended term of the patent.

The fourth affirmed the validity of the receiver's deed to Burton, and that the proceedings in Pennsylvania, and that deed divested Trimble's entire interest.

The fifth was a corollary to the fourth, and assumed that as the

Argument for the plaintiff in error.

deed of trust was not recorded in the Patent Office when the proceedings in Pennsylvania took place, it cannot operate to Burton's prejudice if neither he, the complainant, nor the receiver had any knowledge of it.

The sixth asserted that the assignment by Howe's administrator to Daniel Stone, passed the legal right under the extension to said Stone.

The seventh, touching limitations, was granted.

The eighth asked an instruction that there was no evidence in the case from which the jury could find that the plaintiffs had an exclusive legal title to the use of the Howe improvement at the time of the infringement.

Under these instructions, excepted to by the defendant, the jury found a verdict of \$12,500 for the plaintiff, and after judgment the case was brought here on error.

Messrs. W. Schley and T. Donaldson, for the plaintiff in error:

1. The alleged infringements occurred during the extended term of the patent, but the plaintiffs below did not adduce any evidence of title in that term. There is nothing in the agreement, nor in the assignment, relied on by them, which would justify the conclusion, that the parties had in contemplation the possible *extension* of the patents, or any of them. *Wilson v. Rousseau*, 4 Howard, 682, seems in point. There a covenant by the patentee, prior to the Patent Act of 1836, whose 18th section authorized extensions, that the covenantee should have the benefit of *any* improvement in the machinery or *alteration* or *renewal* of the patent, did not include an extension by an administrator under that act; and other cases favor that view. *Wilson v. Simpson*, 9 Howard, 109; *Bloomer v. McQuewan*, 14 Id., 539; *Hartshorn v. Day*, 19 Id., 220; *Chaffee v. Boston Belting Company*, 22 Id., 223; *Day v. Union Rubber Company*, 3 Blatchford, 491, 504.

2. Even if there had been, in the agreement or assignment, or in both, a covenant, providing for an interest in any extension, it would, *as respects third parties*, have vested but an equitable right. By estoppel, the subsequently accruing right feeding the estoppel—it might, in a suit *inter partes*, even at law, have clothed the covenantee with a legal right. But, however this might be in such case, it could not create a legal right, to be enforced by the covenantee, or his assigns, in an action at law, against a stranger to the covenant.

3. But even if Trimble had an inchoate right, in the possible extension of the patent of 1846, his agreement with Daniel Stone

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passed to Daniel Stone *one half* of such right; and, of course, the plaintiffs (assuming the agreement to be operative) would not have such exclusive title, as would enable them to maintain this suit.

4. The evidence of Trimble, as a witness, is not competent legal evidence to destroy the agreement; or to revest in him the moiety, which he had transferred to Stone. An assignment of a legal interest in a patent, or of an interest therein, can, under the 11th section of the Patent Act of 1836, only be made by writing. Even if the facts, stated by the witness, would avail in equity, as a ground for a decree setting aside the deed, still, in a suit at law, they cannot annul the agreement. *Philadelphia and Trenton Railroad Company v. Stimpson*, 14 Peters, 461; *Hartshorn v. Day*, 19 Howard, 220; *Troy Iron and Nail Factory v. Corning*, 1 Blatchford, 472.

5. Without entering into any discussion of the merits of the suit in the Supreme Court of Pennsylvania, it was shown that it was still pending; and that the court, by a receiver, had taken possession of the interest of Trimble in the patent right, long before the commencement of this suit. Coming into question, collaterally, in this suit, comity requires that the action of that court should not be declared a nullity in law. It was a proceeding in a court of equity; and partnership matters are properly cognizable in equity. It was a case in a matter within its jurisdiction. The appointment of a receiver is an ordinary exercise of power, for the purpose of preserving property, pending litigation; and it is the province of every court, having possession of a cause, to decide for itself, whether, upon the state of case before it, it is expected to exercise the power. The averments of the bill presented a strong case for prompt interference.

Messrs. B. C. Prestman and S. T. Wallis, contra.

Mr. Justice SWAYNE delivered the opinion of the court.

The controversy between the parties in this court is confined to questions relating to the title of the defendants in error under the extended patent of August 23, 1860, alleged to have been infringed by the plaintiffs in error. The instruction given, and those refused by the court below, which are brought under review, must be examined in the light of the facts which the bill of exceptions discloses. Before proceeding to consider the main questions in the case, we deem it proper to dispose of others arising upon the record in regard to which we have found no difficulty and entertain no doubt.

The deed of Isaac R. Trimble of the 30th of May, 1861, conveyed

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all his rights under the patent, whatever they may have been, to the grantees in that instrument. If his title was sufficient, theirs is so. This was not controverted by the counsel for the plaintiffs in error, and needs no further remark.

The assignment of the 11th of June, 1864, to Aaron E. Burton, made by John E. Shaw, as receiver appointed in the case in equity in the Supreme Court of Pennsylvania, wherein Joseph Stone, administrator of Daniel Stone, was complainant, and Isaac R. Trimble defendant, was a nullity, and, as such, may be laid out of view. Looking into the record, we find no evidence of the issuing of any process against Trimble, or that he was notified of the pendency of the suit by publication or otherwise. It does not appear that there was any step whatever taken to bring him before the court. The entire proceeding, as disclosed, was *coram non judice* and void. It may be added that Trimble's deed to his co-plaintiffs was prior in date to the filing of the bill, and that the title of the grantees in that deed could not be affected by a proceeding to which they were not parties.

If Trimble, at the date of that deed, held the title under the extended patent, which the defendants in error insist he had, the deed of confirmation to him from Howe's administrator, of the 18th of September, 1854, touching the patent of 1846, extended by the one in question, was inoperative and useless. It was referred to in the argument, as showing the construction put by the parties upon the deed of Howe to Trimble of the 9th of July, 1844. Where there is doubt as to the proper construction of an instrument, this feature of the case is entitled to great consideration. But where its meaning is clear in the eye of the law, the error of the parties cannot control its effect. In this view of the subject, conceding that Trimble took this conveyance, *not* out of abundant caution, and to solve in his favor a doubt which might otherwise possibly arise against him, *but* because he deemed it necessary to give him a title which he did not already possess, his legal rights in this controversy are just what they would have been if that instrument had not been executed.

If the construction given to the deed of Howe by the counsel for the defendants in error be correct, and no part of the title vested in Trimble by that deed passed to Daniel Stone by the agreement of the 30th of September, 1846, between him and Trimble, as the counsel for the defendants in error insist, there was nothing for the deed of Howe's administrator to Stone of the 1st of April, 1861, nor for the deed of Stone's administrator of March 6, 1865,

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to Burton, to operate upon, and both of them were also without effect upon the rights of the parties in this litigation.

This brings us to the examination of the deed of Howe to Trimble, and of the agreement between Trimble and Stone. They are the hinges upon which the controversy turns. The stress of the argument on both sides was properly confined to these subjects in their several aspects of fact and of law.

The deed from Howe recites that he had obtained from the United States two patents for new and useful improvements in the construction of truss bridges and other structures—one dated on the 10th of July, the other on the 3d of August, in the year 1840. The instrument is a deed poll. After setting out the consideration, it proceeds as follows: “I have assigned, sold, and set over, and do hereby assign, sell, and set over, all the right, title, and interest which I have *in said invention*, as secured to me by said letters patent, *and also all right, title, and interest* which may be secured to me for alterations and improvements on the same *from time to time*, for, to, and in the following States, viz.,” &c.: . . . “the same to be held and enjoyed by the said I. R. Trimble for his own use and behoof, and for the use and behoof of his legal representatives to the full end of the term for which said letters patent are *or may be granted*, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not have been made.” A careful analysis of these provisions eliminates the following results: Howe assigns to Trimble all his title and interest in the inventions secured to him by the two patents mentioned, in respect to the territory specified, and also all the right and title which should be secured to him for alterations and improvements in the inventions, *from time to time* thereafter, for the same territory, to be held and enjoyed by Trimble to the full end of the terms for which patents had been theretofore, or might be thereafter, granted, in all respects as they would have been held and enjoyed by the assignor if the assignment had not been made.

The language employed is very broad. It includes alike the patents which *had been issued* and all which might be issued thereafter. No discrimination is made between those for the original inventions and those for alterations and improvements, nor between those which were first issues and those which were reissues or renewals and extensions. The entire inventions and all alterations and improvements, and all patents relating thereto, whenssoever issued, to the extent of the territory specified, are within the scope of the terms employed. No other construction will satisfy them.

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Upon the fullest consideration we have no doubt such was the meaning and intent of the parties.

The effect of such a contract, we think, has been settled by this court in *Gayler v. Wilder and others*, 10 Howard, 477. Fitzgerald, the inventor, before the patent was issued, assigned his entire right to Enos Wilder. The assignment contained a request that the patent should be issued to the assignee, and was duly recorded in the Patent Office. This brought the case within the terms of the 6th section of the act of 1836. Fitzgerald made no assignment after the patent was issued to him. Enos Wilder, his assignee, assigned to Benjamin Wilder, who was the plaintiff in the action. The defendants insisted that Enos Wilder had not the legal, but only an equitable title. Upon the question whether an assignment subsequent to the issuing of the patent was necessary to pass the former to the assignee, this court said: "We do not think the act of Congress requires it, but that when the patent issued to Fitzgerald, the legal right to the monopoly and the property it created was, by the operation of the assignment then on record, vested in Wilder." The argument which controlled the judgment of the court may be thus stated: Fitzgerald had an inchoate right at the time of the assignment, the invention being then complete and the specification prepared. It appeared, by the language of the assignment, that it was intended to operate upon the perfect legal title, which he then had a lawful right to obtain, as well as upon the inchoate right which he then possessed. There was no sound reason for defeating the intention of the parties by restricting the assignment to the latter interest, and compelling the parties to execute another transfer, unless the act of Congress required it, which, in the opinion of the court, it did not. The act of 1836 declares that every patent shall be assignable in law. The thing to be assigned is not the mere parchment on which the grant is written, but the monopoly which the grant confers—the right of property which it creates. "And when the party has acquired an inchoate right to it, and the power to make that right perfect and absolute at his pleasure, the assignment of his whole interest, whether executed before or after the patent issued, is equally within the provisions of the act of Congress." We concur in these views. The rule laid down is the law of this tribunal upon the subject. There the patent was an original one, here it is an extension. The question before us arises under the 11th and 18th sections of the act of 1836. But the arguments which controlled the decision in that case apply in this with equal force. The same considerations are involved in both. There is no substantial ground of distinction. The appli-

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cation of the same principle to the assignment of an extended patent, made before the extension, is an inevitable corollary from the reasoning and ruling of the court. Without, in effect, overruling that adjudication, we cannot hold that Trimble had not a legal title under the extended as well as under the original patent. In our judgment he had such a title.

In this connection our attention has been called by the counsel for the plaintiffs in error to *Wilson v. Rousseau*, 4 Howard, 682, and several other cases. None of them turned upon the question we have been considering, and neither of them contains anything in conflict with the proposition established by *Gayler v. Wilder*.

It remains to consider the contract between Trimble and Daniel Stone.

It recites the agreement between Trimble and Howe, and the payments thereby stipulated to be made by Trimble. Stone covenants to pay one half of the installments still unpaid as they should mature.

This clause follows:

"And the said Isaac R. Trimble, in consideration of the said *payments, promises, and agreements* on the part of the said Daniel Stone as aforesaid, for and on the part of himself, the said Isaac R. Trimble, and his heirs, executors, and administrators, covenants and agrees, and by these presents doth covenant and agree, to sell and transfer, and *doth hereby sell and transfer* unto the said Daniel Stone, his heirs, executors, and administrators, *the one equal moiety* or half part of all the right, title, claim, and interest of him, *the said Isaac R. Trimble*, of, in, and to the patent right aforesaid, which he purchased as aforesaid of the said William Howe, the sale heretofore made to Reading excepted."

A copartnership between the parties in the business of building bridges under Howe's patents was then entered into, and it was agreed that if either party should at any time desire a dissolution, Trimble should name a sum which he would be willing to give or take for a moiety of the rights which he acquired from Howe, including the payments to Howe, and that Stone should thereupon decide whether he would buy or sell. It was further provided that the copartnership might be dissolved at the expiration of six months after notice by either party.

Trimble was examined as a witness, and testified as follows: Stone never made any of the payments which he was required to make by the contract. By common consent of the parties, the contract never went into operation in any way, because Stone was unable to comply with any of his engagements. Trimble was

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compelled to pay, and did pay, the full amount of the installments still due on his contract with Howe. Stone during his lifetime never claimed any right under the contract; but, on the contrary, always recognized Trimble's exclusive right to the interest referred to in the agreement, and acted as Trimble's agent in building bridges, under a power of attorney, paying Trimble a part of the profits for the privilege. There was no other evidence on the subject. Trimble's testimony was uncontradicted.

The agreement was recorded in the Patent Office on the 27th of July, 1864, after Stone's death, and more than eighteen years after the date of its execution.

The words, "and do hereby sell and transfer," found in the copy from the Patent Office, which was used in evidence in the court below, are not in the copy annexed to the bill filed in the Supreme Court of Pennsylvania. But, conceding that they were in the contract as executed, and that the contract had the same effect in transferring to Stone a moiety of Trimble's rights and interests, which Trimble's contract with Howe had in transferring the whole to Trimble, then a question arose for the jury as to the effect of the facts disclosed in Trimble's testimony. Upon the trial the court, at the request of the plaintiffs, charged the jury in effect, that if they found the facts to be as testified by Trimble, the contract between Trimble and Stone "was not to be regarded as passing any title to Stone, which the defendant was entitled to set up in connection with any other evidence in the cause as a bar to the right of the plaintiffs to recover," provided they found also the execution and delivery of Trimble's deed to his co-plaintiffs. To this instruction the plaintiffs in error excepted.

If the facts were as alleged by Trimble, his contract with Stone was stillborn. It never had any vitality. Neither the legal representative of Stone nor any one in privity with him asserts its validity in this litigation. It is vicariously put forward by the plaintiffs in error. They seek to give it life and vigor, and invoke its aid for their protection.

If a deed of real estate be executed and recorded, *prima facie* it conveys the legal title; but if it be shown it was not delivered, that destroys its effect. *Maynard v. Maynard et al.*, 10 Massachusetts, 456. A judgment may be assigned without written evidence of the transfer. *Ford v. Stuart*, 19 Johnson, 342. A party may waive a constitutional provision which applies in his favor. *Baker v. Braman*, 6 Hill, 48. Fraud or mistake in the execution of a deed may be shown at law. *Hartshorn, Executor, v. Day*, 19 Howard, 223. The most solemn contracts under seal, where the statute

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of frauds is not involved, may be changed or abrogated by a new parol agreement, express or implied; and a contract within the statute may be taken out of it by the conduct of the parties. *Emerson v. Slater*, 22 Howard, 41. If Stone's administrator were to sue Trimble, and the facts should be established as Trimble alleges them to be, the action would be barred by *estoppel in pais*. We think the instruction was correct, and that it properly submitted this part of the case to the jury.

The plaintiffs in error submitted eight prayers for instructions. The 2d, 3d, 4th, 5th, 6th, and 8th, were refused. The refusal was excepted to. Some of the points which they present were not insisted upon in the argument at the bar. The others are sufficiently answered by what has already been said.

JUDGMENT AFFIRMED.

Mr. Justice BRADLEY dissented, on the ground that there was not enough language in the assignment of Howe to Trimble to show that a transfer of the extension was intended.

EUREKA COMPANY v. BAILEY COMPANY.

(11 Wallace, 488.)

1. A contract in writing may be binding on a corporation though a private seal of one of its officers was used instead of the corporate seal, and though no record may be found authorizing the officer to make the contract, if other evidence proves that he had such authority, or that the company ratified his act afterwards.
2. A patent from the government cannot be impeached for fraud in procuring its issue in any other mode than by a direct proceeding to set it aside. But it may be shown in a suit on a reissued patent that it covers matter not part of the original invention.
3. When parties have, after long negotiation, with full opportunities for knowing what they are doing, entered into contracts for the use of inventions covered by rival patents, and no fraud or imposition is alleged, the case of a party sued in such a contract must be very clear, who denies the validity of the patent for which he has agreed to pay a royalty.
4. And when such a party has furnished under the contract a model of the machines which he proposes to make, on which he agrees to pay a royalty, he cannot deny that such machine contains matter covered by the patent, unless he alleges and proves circumstances which would set aside the contract for fraud, mistake, or surprise.

APPEAL from the Circuit Court for the District of Massachusetts; the case being thus:

The Bailey Company was the owner of a reissued patent for an improved washing and wringing machine, the original of which had been issued to John Allender. There had been several sur-

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renders and reissues of this patent, the last of which was on the 22d July, 1865. The Eureka Company being engaged in the manufacture of clothes-wringing machines under other patents, one S. B. Rindge, its treasurer, professing to act as its agent, entered into two written indentures with the Bailey Company, through its general agent, for the privilege of using their patent.

The execution of the agreements was in the following form:

"In witness whereof the said party of the first part have caused its seal to be hereunto affixed, and this instrument to be signed by S. A. Bailey, its general agent, thereto duly authorized; and the said party of the second part has affixed its seal and caused these presents to be signed by S. B. Rindge, its treasurer, thereunto duly authorized, this day and year first hereinabove written.

"Bailey Washing and Wringing Machine Co.,

"S. A. BAILEY, [SEAL.]

"General Agent.

"Eureka Clothes Wringing Machine Co.,

"By S. B. RINDGE, [SEAL.]

"Treasurer."

The seals above set were not corporate seals, but mere private seals.

The first of the agreements licensed the Eureka Company to use the patent of the Bailey Company during the existence of the patent, and of any renewal thereof, for which the Eureka Company was to pay a royalty of fifty cents for every machine manufactured by it in which the patent should be used. To secure the performance of this, and to prevent any misunderstanding, the Eureka Company furnished a sample of the machines, and agreed that its books should, at all times, be open to the examination of complainants, and that it would make monthly reports and payments; and it covenanted that it would not, directly or indirectly, infringe the reissued patent of the Bailey Company, or violate the conditions of their agreement.

The second agreement was made to arrange the prices at which the machines made by the parties should be sold, so as to prevent injurious competition.

The Eureka Company made a report and payment for one month after the agreement, but would make no more. Thereupon the Bailey Company filed a bill in the court below. The bill set out the covenants. It charged that they were the result of protracted negotiation, in which the original patent, the reissues, and the character of the invention were well considered, and that they were

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a fair adjustment of the interests of the parties. It then alleged that in the first month five hundred machines were made under the contract and paid for by defendant, but that it continued to make and sell the machines, and refused to account or to pay for them. It then prayed a discovery of the number made, and for an account and decree for the sum due, and for an injunction against the use of the patent until the sum found due should be paid.

The answer of the Eureka Company, which was somewhat vague in its allegation, denied that it had ever executed, or caused to be executed, or ever authorized any one in its name or behalf to execute the indentures; asserted that ever since its organization the company had a corporate seal, duly adopted and established. (an impression of which it affixed in the margin,) and that it had never employed any other, or authorized any agent to use or employ any other; it denied the infringement, asserted that the reissued patent was obtained by fraud; that it was a device to cover matter not invented or claimed by Allender, and denied that the machines made by the defendants had anything in them covered by the patent of the complainant.

Replication was put in, and testimony taken. The complainant did not produce any minute from the books of the corporation, directing Rindge to make the covenant which he had undertaken to make. But Rindge's relations and action as agent to the company, and the report and payment for one month, were sufficiently proved.

The machine which the Eureka Company was making was before the court; the purpose of its exhibition being to show that it was not covered by the original patent to Allender; but the patent was not in the record, nor were any of the reissues, except the last.

The court below rendered a decree according to the prayer of the bill, and the Eureka Company brought this appeal.

Mr. J. B. Robb, for the appellant; Mr. C. L. Woodbury, contra.

Mr. Justice MILLER delivered the opinion of the court.

1. We are satisfied that the agreements set up in the bill are the valid contracts of the defendant. Though the plaintiff was unable to produce any resolution or order in writing by the trustees or board of directors of the defendant corporation, and though the seal used was the private seal of one of its officers, instead of the corporate seal, neither of these is essential to the validity of the contract. We entertain no doubt that Rindge, the agent and one of the directors and treasurer of the Eureka Company, was authorized to execute the agreement, and if any doubt existed on that

Opinion of the court.

point, the report and payment for five hundred machines, the first month's use of the patent under that agreement, would remove the doubt. If it did not, it would very clearly amount to a ratification.

2. The defendant company furnished a sample of the machine they were making. That machine is before us. We do not understand that it is seriously contended that this machine does not contain some part of the invention covered by the reissue of the Allender patent. The effort of defendant is to show that it is not covered by the original patent to Allender. This latter point will be noticed presently. After making the agreement in this case, an agreement made on due deliberation, the defendant being engaged in the business of making the machines before it took the license, an agreement manifestly intended to adjust conflicting rights, and after furnishing one of the machines as a sample of what it proposed to do under that agreement, and after having made and sold five hundred of them, there arises a very strong presumption that the denial that anything in those machines is covered by plaintiff's patent is made to support an unwillingness to pay the royalty which it had agreed to pay. And we are not at all satisfied that, in equity, it can be permitted to set up this defense, while it makes no attempt by cross-bill, or even in the answer, to show that the agreements were obtained by fraud, surprise, or imposition.

But if this could be permitted, the testimony does not repel the presumption arising from the making of that contract and the defendant's action under it, that the machines made by it do contain matter covered by the reissued patent of plaintiff.

3. If the defendant means, by the very vague answer to the bill, to set up and to rely on a fraud by which the Commissioner was misled and deceived, and induced to reissue the patent, and that the plaintiff or its assignors were the guilty parties, that question cannot be raised in this collateral proceeding, and can only be considered in some direct suit to impeach and set aside the patent. *Rubber Company v. Goodyear*, 9 Wallace, 788.

But if it is meant merely to say that, in point of fact, the reissue embraces matter which was no part of Allender's original invention, then there is no evidence in the record by which we can determine that question, for neither the original patent to Allender, or any part of it, or any of the reissues of that patent, except the last, which is the one claimed to be wrongfully reissued, is in the record.

4. Some attempt is made to assail the novelty of Allender's invention, but as no notice was given of any such attempt, or of the

Syllabus.

witnesses or other evidence by which that charge was to be supported, it cannot be considered in this case.

On the whole case we concur with the Circuit Court, and its
JUDGMENT IS AFFIRMED.

SEYMOUR v. OSBORNE.

(11 Wallace, 516.)

1. The invention of William H. Seymour and of Palmer and Williams, explained and defined.
2. The grant of letters patent by the Commissioner of Patents when lawfully exercised, is *prima facie* evidence that the patentee is the first inventor of that which is described and claimed in them.
3. The settled practice in equity is to require a respondent to give notice in his answer of the names and residence of those persons whom he intends to prove to have possessed a prior knowledge of the invention, and where the same had been used.
4. Recitals in letters patent in the absence of fraud are conclusive evidence that the necessary oaths were taken before the patent was granted.
5. Where an invention does not embrace an entire machine, the part should be specified and pointed out, as *ex. gr.*, the coulter of the plough, or the divider or sweep-rake of a reaping machine, so that another party may construct the plough or reaping machine, provided he does not use the part specified.
6. Neither reissued nor extended patents can be abrogated by an infringer in a suit against him for infringement, upon the ground that the letters patent were procured by fraud in prosecuting the application for the same before the Commissioner.
7. The act of the Commissioner in accepting a surrender and granting a reissue is final and conclusive, and not re-examinable in a suit in the Circuit Court, unless it is apparent upon the face of the patent that he has exceeded his authority, or that there is such a repugnancy between the old and the new patent that it must be held as a matter of *legal construction* that the new patent is not for the same invention as that embraced and secured in the original patent.
8. Interpolations in a reissued patent of new features or ingredients or devices, which were neither described, suggested, nor substantially indicated in the original specifications, drawings, or Patent Office model, are not allowed.
9. Parol testimony as to the scope of an original invention, is not allowable on an application for a reissue as the basis of interpolation of new matter.
10. The identity of invention in the original and reissued patent in such suits, is a question of comparison of the two instruments to be made by the court, aided or not by the testimony of experts, as it may or may not appear that one or both may contain technical terms requiring the assistance of such persons in defining them.
11. To raise such a question, the defendant in a patent suit must introduce the original patent.
12. A claim which might otherwise be held to be bad as covering a function or result, when containing the words "substantially as described," must be construed in connection with the specification and be limited thereby; and when so construed it may be held to be valid. The claims in this case, when so construed, were so held.

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13. Changes in the construction and operation of an old machine, so as to adapt it to a new and valuable use which the old machine had not, are patentable, and may consist either in a material modification of old devices, or in a new and useful combination of the several parts of the old machine.
14. Utility, in the sense of the patent law, does not require such general utility as to supersede all other inventions that can accomplish the same object.
15. Crude and imperfect experiments do not confer a right to a patent. He is the first inventor who first perfects and adapts an invention to use.
16. Desertion of an alleged prior invention, consisting of a machine never patented, may be proved by showing that the inventor, after constructing it, broke it up or laid it aside, as something requiring more thought and experiment; provided it appears that those acts were done without any definite intention of resuming his experiments.
17. Under the act of Congress allowing reissues in divisions, it may require the use of several reissues to constitute a complete machine, and on a proceeding for infringement these may be introduced in one bill.
18. A description in a prior publication, in order to defeat a patent, must contain and exhibit a substantial representation of the patented improvement in such full, clear, and exact terms, as to enable any person skilled in the art or science to which it appertains, to make, construct, and practice the invention patented. It must be an account of a complete and operative invention, capable of being put into practical operation.
19. The extent to which either the inventor of a device or of an entire machine, or of a mere combination, can invoke the aid of the doctrine of equivalents, is the same, except that a combination is not infringed unless by a machine containing all the material ingredients patented, or proper substitutes for one or more of such ingredients, *well known to be such* at the time when the patent was granted.
20. A question of infringement is best determined by the court, by a comparison of a defendant's machines with mechanism described in patent, and of their modes of operation.
21. The use of one post and a supporting frame attached thereto in a reaping machine, is an obvious equivalent for the two posts specifically mentioned in the patent of Palmer and Williams.

APPEAL from the Circuit Court for the Northern District of New York.

The suit below was on a bill by W. H. Seymour and D. S. Morgan, for the infringement by Osborne of five patents owned by them, for improvement in reaping machinery.

Two of these patents covered the inventions of Seymour—one (No. 72) relating to the shape or construction of the grain platforms, and its special location in reference to the cutting apparatus—the other (No. 1683) involving the gathering-reel as an additional element to the combination just named.*

* Seymour's patent was granted July 8th, 1851, and this patent was reissued July 10th, 1860, in decisions 1003, 1004, 1005. Reissue No. 1005 was again surrendered and reissued May 7th, 1861, numbered reissue 72, which was in this suit. Reissue No. 1003 was also surrendered and reissued May 3d, 1864, as reissue No. 1683, which was also in this suit.

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The other three patents in controversy were granted to secure inventions made by Palmer and Williams, assignors of the complainants. Two of the latter patents (No. 1682 and No. 4) were for the employment of a discharging sweep-rake in connection with the peculiarly shaped platform, which was conceded to have been the invention of Seymour.*

The third patent of Palmer and Williams (No. 10,459) was for the means of sustaining the reel or grain-gathering device, consisting of a prolonged axle and two supporting posts, placed at one end of the reel only, leaving the other end free.†

The court below was of the opinion that the proofs of the complainants did not show any infringement, and so dismissed the bill. From this decree the complainants took this appeal.

The leading parts or features of a reaping machine are three in number.

First. The part which gathers or presses the standing grain to the cutting apparatus, and this has been called a reel. (Fig. 1.)

Second. The cutting apparatus which severs the stalk; which

Fig. 1.

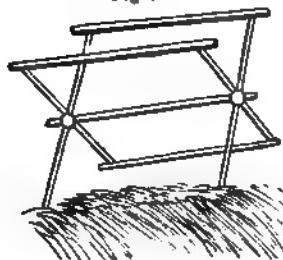


Fig. 2.

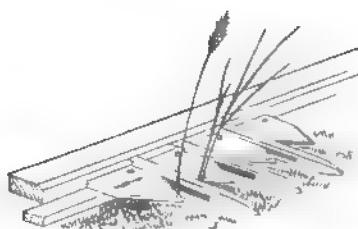
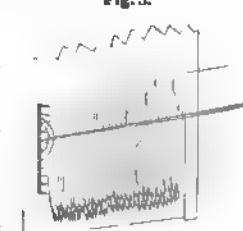


Fig. 3.



cutting apparatus usually consisted of a vibrating scalloped sickle, sliding through a series of fingers or guards.

(Fig. 2.)

Third. A platform on which the grain is received, after it has been severed from the stalk. (Fig. 3.) In connection with the platform there is also to be noticed, its shape, and the arrangements for removing the grain therefrom, and depositing it on the ground in gavels

* Palmer and Williams obtained original patent dated July 1st, 1851. This was surrendered April 10th, 1855, which was again surrendered January 1st, 1861, and reissues 4 and 5 granted. Reissue 5 was surrendered May 31st, 1864, and reissue 1682 granted in lieu thereof. Reissues 4 and 1682 are concerned in this suit.

† Palmer and Williams obtained a separate patent for reel-support, January 24th, 1854, numbered 10,459, which patent is in this suit.

Statement of the case.

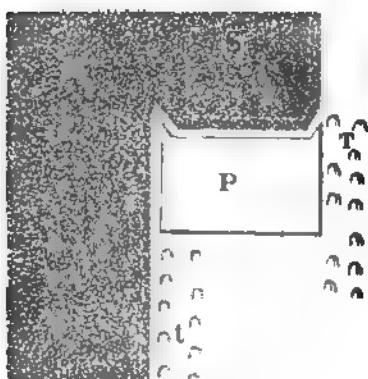
or bundles ready for the binder. The latter arrangement usually consisted, in practice, prior to the patents in controversy, of a hand-rake and device for supporting the body of the raker on the machine, as shown in Figure 5, further on.

These several parts in the machine were necessarily so arranged with reference to each other as to co-operate in producing the desired result, viz., that of cutting the grain and depositing it on the ground in bundles, adapted to being readily bound into sheaves.

The reaping machine, when doing its work, passes around the field, the horses being attached in front, and to one side of it, and if, while cutting the first swath, the grain was to pass directly back and fall on the ground in the rear of the sickle, as the horses came around with the machine to cut the second swath, they would walk over and trample upon this grain which had been just cut.

Thus, if S represents the standing grain and P the platform, and if the distinctly-marked horse tracks, T, in the cut, represent

FIG. 4.



the path just passed over by the horses, in cutting the first swath, then the dotted horse-tracks, t, show the path the horses will pass over on their next round.

If the grain be thrown from the platform so as to fall on the track just passed over by the horses, (i.e., on the distinctly-marked horse-tracks T,) it will then be out of the way of the horses on their next round. If, however, the grain be discharged directly backwards, immediately behind the sickle, it will

be in the way of the horses on their second round, and, in that case, binders must be employed to follow the machine and bind the grain into sheaves and lay it to one side, before the horses come around with the machine to cut the succeeding swath.

It is evident that the proper place to discharge the grain is in the path just passed over by the horses; and behind the horses, because it will then be out of the way of the horses on their next round.

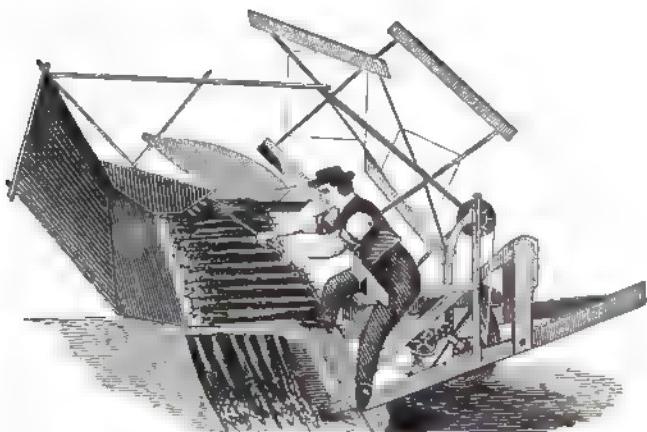
Perhaps the most usual mode of discharging grain practiced prior to the patent in controversy here, is shown in the accompanying sketch.

The plate represents the arrangements for discharging the grain, and also the relative position of cutter, reel, and platform, as well

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as that of the gavel or sheaf deposited on the ground. The raker is supported upon that machine by a seat or stand which sustains the lower part of his body, leaving the upper part of his

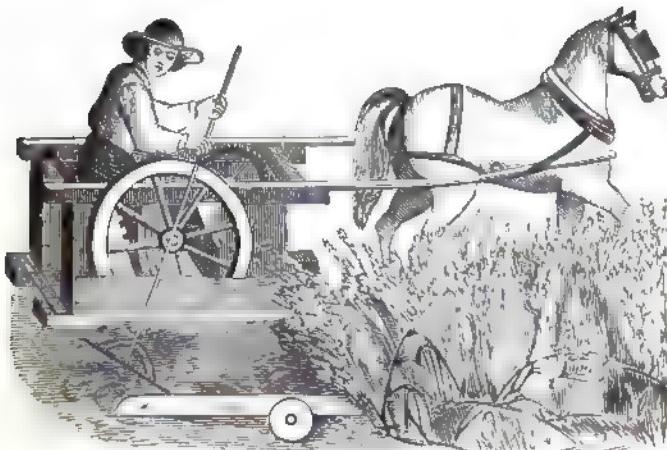
Fig. 6.



body free, to enable him to operate the hand-rake with his arms. From this position he reaches the cut grain on the platform back of the reel, and by a sweep of his arms delivers it on the ground, either diagonally or more or less at right angles to the track in the path passed over by the horses.

This mode of delivering the grain, however, was fatiguing to the raker, and frequently the grain was deposited in a straggling manner upon the ground, and more or less obliquely to the track or path of the machine.

Fig. 6.



Obed Hussey's Machine.

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Obed Hussey, one of the earliest inventors of reaping machines, constructed his machines without a reel, and with a square platform, and discharged the grain when cut immediately in the rear of the platform, as shown in the drawing, Figure 6.

In this machine, the grain was discharged directly into the path to be passed over by the horses in their next round, and had therefore to be gathered up immediately as fast as cut. Some machines were also constructed by Hussey with a strait guide-board on the platform, which was adjustable within certain limits, and which, to a certain extent, caused the cut grain to be pressed to one side sufficiently for a single horse or tandem team to pass on the next round without trampling on the cut grain. Hussey also made machines with two platforms—one platform attached to the rear of the other—and employed two men, one to rake the grain back, and the other to discharge it to one side. He likewise made a reaping machine with a square platform, to the rear of which was bolted an angular addition, giving to the whole where the addition was attached an angular form. This machine was made in 1848, and after being made, it was removed in the latter part of the summer of 1848, from Hussey's shop in Baltimore, of which place he was at the time a resident, to the railroad depot, and (as the witnesses understood) to be shipped for trial, but they did *not know* where it was to go, or whether, in fact, it was ever so shipped or tried. Some time in 1849, or later, this machine reappeared at the shop of Hussey, and had the appearance of having been used some little. On its return to the shop it was set aside, and nothing more was done to it or with it until it was looked up in connection with this suit.

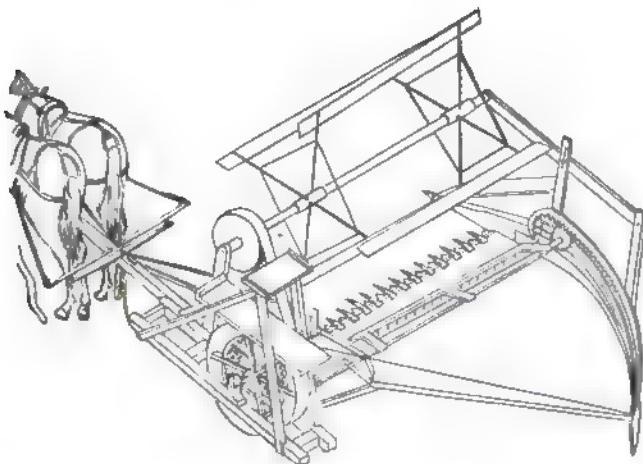
An important question arose upon this state of facts as to whether that last machine, even if conceded to be the same in principle with that of the complainants, amounted in view of law to an anticipation of their invention.

The invention of Seymour consisted in constructing the platform upon which was received the grain in the shape of a quadrant or sector of a circle, and placing it just behind the cutting apparatus, and in such relation to the main frame that the cut grain could be swept around on the arc of a circle, and dropped on to the ground behind the horses, so as to be so far removed from the standing grain as to leave room for the horses and frame to pass between the standing grain and the gavels, thereby obviating the necessity of taking up the cut grain as fast as cut, and at the same time doing the work more perfectly. It is here shown.

Such being Seymour's invention, he obtained an original patent

Statement of the case.

Fig. 7.



Seymour's Machine.

dated July 8, 1851, and by successive reissues and divers divisions thereon, among other things, two claims were allowed to him, one in reissue No. 72, as follows, viz:

"A quadrant-shaped platform, arranged relatively to the cutting apparatus substantially as herein described, for the purpose set forth."

Fig. 8.



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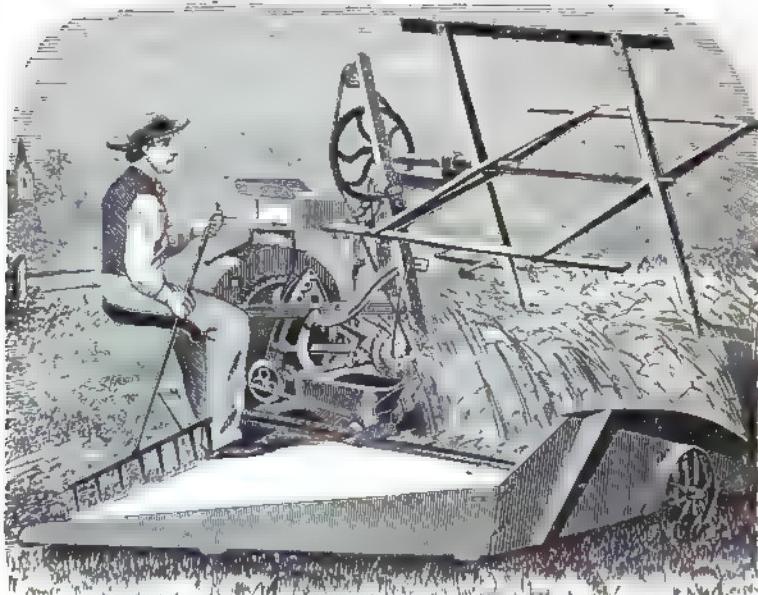
The other claim allowed to him was in reissue No. 1683, on the basis of the same original patent, as follows, viz:

"The combination in a harvesting machine of the cutting apparatus (to sever the stalks) with a reel, and with a quadrant shaped platform located in the rear of the cutting apparatus, these three members being and operating as set forth."

In Figure 8 is shown a quadrant platform cutting apparatus, and the operation of discharging the grain by hand-rake by sweeping it in the arc of a circle. The relative position of the parts also to the reel is shown, the discharging hand-rake striking the cut grain immediately after it is deposited by the reel on the platform.

The complainants alleged that the defendants infringed these two claims by the use of a machine such as is shown in the following sketch.

Fig. 9.



The Defendant's Hand-rake.

This machine was used with a hand-rake. The defendants contended that the complainant's claim was for a quadrant-shaped platform only, and that their own platform was composed of two straight side pieces placed together at an angle.

The court below decided that although this form of the platform made it *in effect* a quadrant-shaped platform; yet that in view of

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Hussey's, and of Nelson Platt's platform, the complainants were only legally entitled to hold under their claim the *precise shape* of platform invented and described by Seymour, and that as so limited, it had not been infringed by the defendants, and that the doctrine of equivalents could not be invoked in such a case on behalf of plaintiff's patent, relying on *Burr v. Duryee*, 1 Wallace, 531. The position thus assumed by the court below was pressed upon this court by the counsel of the defendants, the now appellees.

The machine of Hussey last above referred to, with the angular piece bolted to the platform, was urged as having been a full and complete anticipation of Seymour's invention.

The complainants, or now appellants, on the other hand, contended that Seymour's invention of the quadrant platform was complete in or before the harvest of 1849; that Hussey's machine, with the angular rear piece, had no reel, and was therefore no answer to reissue No. 1683, which had a reel as part of its claim; and that as to reissue No. 72, Hussey was *not proved* to have anticipated Seymour as an inventor, and that his platform was, in point of law, an abandoned or incomplete experiment.

A machine of one Burrall was set up in the answer but not in the argument. Irrespective of plain want of identity it was proved to be posterior in date. It need not be described.

The inventions of Palmer and Williams involved in this suit are embraced in reissue No. 4 and No. 1682, and pertain to the employment of an automatic sweep-rake in combination with the quadrant platform, which as a separate device was conceded as between these two inventors to have been the invention of Seymour.

The annexed description and Figure 10 (p. 300) is taken from Palmer and Williams's patent; and the claim concerned in this case under reissued patent No. 4 was as follows:

"Discharging the cut grain from a quadrant-shaped platform, on which it falls as it is cut, by means of an automatic sweep-rake sweeping over the same substantially as described."

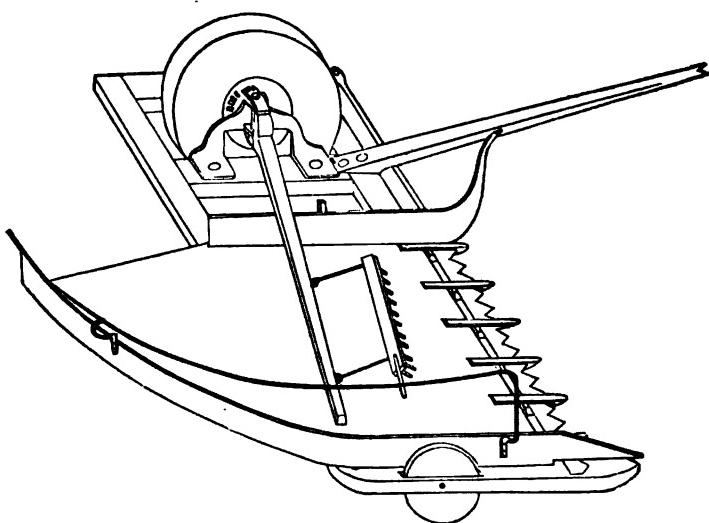
The defendants contended that this was a claim for a function or result, and as such was bad in law, and that the patent was, therefore, void.

The defendants also contended that there was no novelty in the invention, and that Palmer and Williams had been anticipated by Nelson Platt's patent, and although Palmer and Williams's machine differed from Platt's, yet there was no invention in the change from Nelson Platt's rake to the complainants'; that all that Palmer and Williams had in fact done was to take Platt's

Statement of the case.

automatic sweep-rake and put it upon Seymour's quadrant-shaped platform; and that doing this was not invention, but merely the exercise of ordinary mechanical skill.

Fig. 10.



Palmer and Williams's Machine.

This latter view was adopted by the Circuit Court.

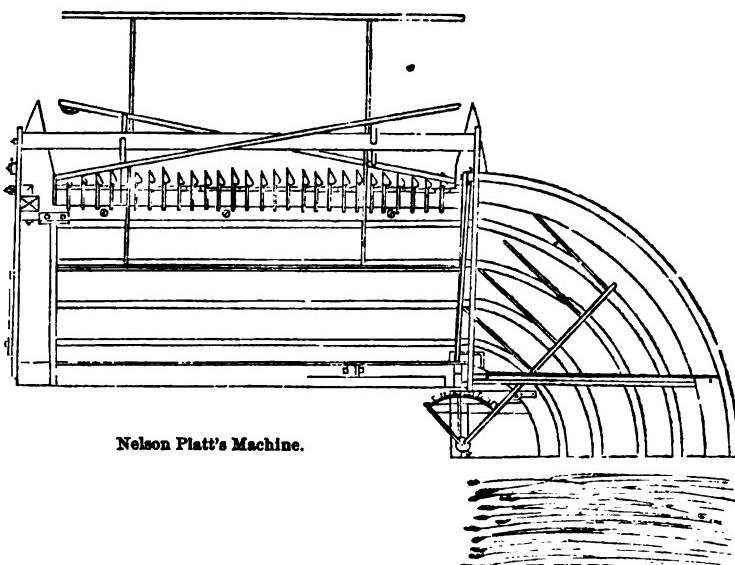
Nelson Platt's patent was granted June 12th, 1849, for a self-raking reaper, which is shown in Figure 11, on page 301.

In this machine the platform was propelled from the rear, and the grain, after being cut, was deposited on a rectangular platform, and was then raked across the rectangular platform, by one set of rakes acting from below, on to a second quadrant-shaped platform. The grain was then discharged from that second quadrant-shaped platform by a vibrating rake, which swept across it in the arc of a circle, on to the ground, the heads of grain lying towards the machine. The defendants did not insist that this was identical in construction with the complainants' invention, but that the skill of the mechanic only was required to change it to their invention. The court below adopted this view.

The complainants contended that the claims of Palmer and Williams's patents were to be construed for covering substantially the "*means*" described for discharging the grain "*as specified*"—that "*this means*" was a combination of mechanism. The elements of the combination are a *quadrant-shaped platform*, a *cutting apparatus*, and an *automatic sweep-rake*, and that these elements must

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Fig. 11.



Nelson Platt's Machine.

sustain to each other, to constitute the thing patented, the following relations:

First. The quadrant-shaped platform must be directly behind the cutting apparatus.

Second. The automatic sweep-rake must traverse the platform so as to sweep the grain from where it falls, as cut, round to the place of its destiny upon the ground.

Third. To accomplish this, the rake must have a certain relation to the cutting apparatus, to the platform, and to the material which has been laid upon the platform.

The complainants further contended, that while, upon the one hand, the claim was for an entirely different invention from Platt's, yet that one form of the defendants' machine, known as their automatic sweep-rake machine, was a clear infringement.

The defendants' automatic sweep-rake machine, alleged to infringe, is here shown.

The automatic rake in that machine swept over the platform from the cutter to the place of delivery. It was used with a platform of the same shape as referred to above in connection with the defendants' hand-raking machine. The automatic rake swept the cut grain from where it fell on the platform to the point of delivery.

The peculiar mechanism or gearing by which the sweep-rake in the defendants' machine was made to traverse their platform was

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admitted by the complainants to be different from that in their patent.

Fig. 12.



Defendant's Self-raking Machine.

Upon the latter difference, the Circuit Court decided that defendant's automatic rake did not infringe the claims now in question, thereby limiting this claim of the complainants to the specific driving mechanism or machinery for gearing and actuating the sweep-rake in its movement.

The claim of the complainant's patent reissue No. 1682, was in the following words:

"The combination of the cutting apparatus of a harvesting machine with a quadrant-shaped platform arranged in the rear thereof, and a sweep-rake operated by mechanism in such manner that its teeth are caused to sweep over the platform in curves when acting on the grain, these parts being and operating substantially as hereinbefore set forth."

And it was contended by the complainants to be a claim to a combination consisting of

1. A cutting apparatus.
2. A quadrant-shaped platform combined with and placed behind the cutting apparatus.
3. An automatic sweep-rake connected with the frame by a pivot and operated by cog-wheels, so as to sweep over the platform while moving the grain towards the delivery side of the platform.

The complainants insisted that the difference between this claim and that of reissue No. 4 was in this:

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That the combination claimed in this patent, No. 1682, appertained exclusively to the operation of cutting the grain, receiving it upon and removing it from the platform. It did not (unless incidentally) include the means of carrying the rake back to seize a new gavel. The claim of No. 4 included also the means of carrying the rake back to get a new gavel after delivering the former one.

The defendants insisted that this patent was void, as being identical with the claim of reissue No. 4, and as also being obnoxious to the objections urged against reissue No. 4.

Patent No. 10,459, granted to Palmer and Williams, was also alleged to have been infringed.

This patent merely related to the mode of supporting the reel. When a reel is supported at each end by a post or bearer, the post or bearer which is on that side or end of the reel which runs into the standing grain encounters obstructions, and these collect upon and impede the rotation of the reel. To avoid this, Palmer and Williams devised the mode of supporting the reel wholly on that side of the machine which did not run into the standing grain, and no support was provided at the other end of the reel. The claim for this invention was in these words:

"The method of hanging the reel so as to dispense with any post or reel-bearer next to the standing grain, as herein described, thereby preventing the grain from getting caught and being held fast between the divider and a reel supporter."

The defendants' machine had but one post. The reel axle, however, was prolonged, and it was supported wholly on that side or end of the reel and by means of two bearings attached to that post. This mode of support is shown *supra*, in Figure 9, and was argued by the complainants' counsel to be substantially the same as that claimed in reissue 10,459.

The only alleged prior invention set up in the proofs against this particular patent was what is called the Ogle machine. The only evidence of this machine was contained in the "Mechanics' Magazine," published in London in 1825.

A copy of the description and drawing from this book was put in evidence by the appellees.

An expert of the defendant testified as to this publication:

"I do not understand that it has any reel support at the grain side of the machine, it being represented as having two reel supports at the stubble side of the machine."

But the expert did not say positively that the reel had not any

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support on the grain side of the machine, but that he did not so understand it; and gave his reasons why he did not so understand it, which was because there were *two supports* on the stubble side; or, in other words, because there were two reel supports on the stubble side he inferred that there was none on the grain side.

On the other hand, the complainants contended that the presence of two reel bearings on the stubble side of the machine was not conclusive evidence of the absence of a bearing also on the grain side, because there might have been two on the stubble side to better support the shaft toward the centre and keep it from sagging, as well as one on the grain side, and that for such purpose they might obviously be useful.

The experts of the complainants testified that these drawings, taken with the printed part of the description in the "Magazine," did not show what is described in this patent of the complainants and specified in the claim in controversy, and that they did not suggest the idea of this invention.

The counsel of the complainants insisted that the description in the first publication, to be available, must be such as to enable the public to practice the invention. Citing *Curtis on Patents*, § 378; *Betts v. Menzies*, *Hall v. Evans*, 6 Law Times, N. S., 90.

In addition to the points above, as to novelty and infringement, other grounds of objection were taken by the defendants to the validity of these reissued patents, among them these:

That Palmer and Williams never made oath to the application on which the reissued patent was granted, and therefore the reissue was void:

That the patentees did not specify and point out in their specifications and claims the parts which they claim as their respective inventions:

That the Commissioner of Patents had no jurisdiction to receive the surrender of the originals or grant the reissued patents thereon, because no evidence was produced before him to show that the originals were "inoperative and invalid:"

That the reissued letters patent were void because they were not granted for the same invention as the original patents.

Messrs. Gifford and Stoughton, for the appellants, the complainants below; Mr. D. Wright, contra.

Mr. Justice CLIFFORD delivered the opinion of the court.

Controversies respecting the infringement of letters patent possess, in many cases, a degree of importance much beyond the profits or damages claimed for the alleged unlawful use of the

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invention, as the pleadings usually put in issue, in one form or another, the validity of the letters patent alleged to be infringed, and frequently involve, directly or indirectly, the same inquiry in regard to the letters patent set up in defense as superseding the patent on which the suit is founded. Such being the state of the pleadings, the result, whatever it may be, whether for the party suing or for the party defending, must oftentimes determine rights of property of much greater value than the amount of the profits or damages claimed for the alleged infringement of the letters patent.

Inventions secured by letters patent are property in the holder of the patent, and as such are as much entitled to protection as any other property, consisting of a franchise, during the term for which the franchise or the exclusive right is granted.

Letters patent are not to be regarded as monopolies, created by the executive authority at the expense and to the prejudice of all the community except the persons therein named as patentees, but as public franchises granted to the inventors of new and useful improvements for the purpose of securing to them, as such inventors, for the limited term therein mentioned, the exclusive right and liberty to make and use and vend to others to be used their own inventions, as tending to promote the progress of science and the useful arts, and as matter of compensation to the inventors for their labor, toil, and expense in making the inventions, and reducing the same to practice for the public benefit, as contemplated by the Constitution and sanctioned by the laws of Congress.

Five several letters patent were owned by the complainants when the present suit was commenced, and they allege in the bill of complaint that the respondents have infringed their exclusive rights as secured to them in each and every one of those letters patent. Four of the letters patent are reissued letters patent, and are numbered and described as follows: (1.) Reissued letters patent No. 4, dated January 1, 1861, for a new and useful improvement in harvesters, being one of a second reissue in two separate patents, on amended specifications, as more fully explained in the pleadings and the patents annexed to the printed record. (2.) Reissued letters patent No. 1682, dated May 31, 1864; also for a new and useful improvement in harvesters, being the second reissue from the before-mentioned reissue when the invention was divided into two parts. They both purport to be founded upon the original patent granted to Aaron Palmer and Stephen G. Williams, dated July 1, 1851, which was for a new and useful improvement in harvesters, and the reissued patents were fully extended for seven years from the expiration of the original term. (3.) Reissued

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letters patent No. 72, dated May 7, 1861, being a reissue of one of three parts of a prior reissue of the original patent, dated July 8, 1851, which was granted to William H. Seymour for a new and useful improvement in reaping machines. (4.) Reissued letters patent No. 1683, dated May 31, 1864, being a reissue of another of the three parts of the prior reissue of that patent, as more fully explained in the pleadings; the charge being that the respondents have infringed the first claim. (5.) Superadded to those several charges against the respondents is the further one that they have also infringed certain original letters patent owned by the complainants, dated January 24, 1854, which secures to them, as assignees of Palmer and Williams, certain other new and useful improvements in grain harvesters besides those embodied in the several reissued letters patent to which reference has been made.

Founded upon those several letters patent, the bill of complaint, which is drawn in the usual form, alleges that the respondents have unlawfully made and used, and vended to others to be used, the respective inventions therein described, and the complainants pray for an account and for an injunction. Service was made upon the respondents, and they appeared and filed an answer, setting up several defenses to each of the patents described in the bill of complaint. Responsive to the answer the complainants filed the general replication, and the cause being at issue they put in evidence the five several letters patent on which the suit is founded, the respondents consenting that copies of the same, and of the respective certificates of extension mentioned in the pleadings, might be substituted in the record in the place of the originals as introduced in evidence.

Other proofs were introduced and the parties were fully heard, but the Circuit Court was of the opinion that the proofs introduced by the complainants were not sufficient to show any infringement of their rights, and accordingly entered a decree for the respondents, dismissing the bill of complaint. Dissatisfied with that conclusion, the complainants appealed to this court, and now seek to reverse that decree.

Separate defenses having been set up in the answer to each of the five letters patent, it will be necessary to a clear understanding of the controversy and to prevent any misunderstanding as to the views of the court, to describe somewhat more fully the nature of the several inventions and the objects which they were designed to accomplish.

I. Explained in general terms, the invention secured in the first-

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mentioned reissued patent, numbered four, consists in arranging an automatic sweep-rake in a harvesting machine in such relation to a quadrant-shaped platform, upon which the cut grain falls as it is cut, that it shall vibrate over the same at suitable intervals to discharge the cut grain in gavels upon the ground.

Specific description is given, in the first place, of the frame of the machine, which, as represented, is composed of three longitudinal beams and two transverse beams securely fastened to each other at their points of intersection. Next follows a reference to the driving wheel, which, as represented, is placed between the outer longitudinal beam and the central beam, having its bearings on arched supports or brackets rising from each of the beams composing the frame. Guard fingers through which a sickle vibrates are secured upon the front edge of a platform shaped like a quadrant or sector of a circle, of which the arm or lever that carries the rake-head forms the radius, and the fulcrum-pin on which the arm or lever vibrates constitutes the centre, the whole operating so that the grain is swept round, on an arc of a circle, and discharged in gavels upon the ground behind the driving wheel.

Minute details of all the other elements of the machine are also given in the subsequent parts of the specifications, and of their modes of operation, and the specification concludes with the claim which, in substance, is discharging the cut grain from a quadrant-shaped platform on which it falls as it is cut, by means of an automatic sweep-rake vibrating over the same, substantially as described, which must be understood as referring back to the description contained in the body of the specification.

II. Two combinations are mentioned in the specification of the reissued letters patent No. 1682, but it is only necessary to refer to the first, as it is not alleged that the respondents have infringed the second claim. Described separately, the ingredients of the first claim are as follows: (1.) The cutting apparatus to sever the standing stalks of grain. (2.) The quadrant-shaped platform arranged behind the cutting apparatus to receive the severed stalks of grain as they fall. (3.) The sweep-rake and the described mechanism to operate the same in such manner that the teeth shall move in circular curves over the platform when they are acting on the grain.

Reference must also be made to the other two reissued letters patents embraced in the pleadings. Both have respect to an improvement made in reaping machines, and they were both granted to secure material parts of an original invention once before surrendered and reissued because the letters patent were defective and

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inoperative. Before the term of the original patent expired the patents were extended for the further term of seven years.

III. Number seventy-two consists in constructing the platform of a reaping machine, upon which the cut grain falls as it is cut, in the shape of a quadrant, or of a sector of a circle, placed just behind the cutting apparatus, and in such relation to the main frame that the grain, whether raked off by hand or by machinery located behind the cutting apparatus, can be swept around on the arc of a circle and be dropped, heads foremost, on the ground far enough from the standing grain to leave room for the team and machine to pass between the gavels and the standing grain without the necessity of taking up the gavels before the machine comes round to cut the next swath.

IV. They also acquired title to the invention secured in the remaining reissued letters patent mentioned in the bill of complaint, to wit, number 1683; but it will be sufficient to refer to the first claim of the same, as the second is not the subject of controversy in this suit.

As described in the specification the ingredients of the first claim are the cutting apparatus to sever the stalks, the reel to incline the heads of the stalks towards the cutting apparatus, and the quadrant-shaped platform, located in the rear of the cutting apparatus, to receive the cut stalks as they fall before the operation of the sweep-rake begins.

Designed as the improvements were to accomplish the same object as the other two improvements previously described, the patentees or owners of the several letters patent elected to compromise rather than litigate, and the result was that the entire interest became ultimately vested in the appellants.

V. Patented improvements in the method of transferring motion from the driving wheel of a reaping machine to the rake on the platform of the machine, and in the method of hanging the reel so as to dispense with any post on the side of the machine next the grain, were also acquired by the appellants as a part of the same arrangement, and they charge in the bill of complaint that the second claim of the original letters patent, embodying that improvement, is also infringed by the respondents.

Power to grant letters patent is conferred by law upon the Commissioner of Patents, and when that power has been lawfully exercised, and a patent has been duly granted, it is of itself *prima facie* evidence that the patentee is the original and first inventor of that which is therein described, and secured to him as his invention. *White et al. v. Allen et al.*, 2 Clifford, 228.

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Persons seeking redress for the unlawful use of letters patent, in which they have an interest, are obliged to allege and prove that they, or those under whom they claim, are the original and first inventors of the improvement embodied in the letters patent on which the suit is founded, and that the same have been infringed by the party against whom the suit is brought.

Undoubtedly the burden to establish both of those allegations is, in the first place, upon the party instituting the suit, as they lie at the foundation of every such claim, but the law is well settled that the letters patent in question, where they are introduced in evidence in support of the claim, if they are in due form, afford a *prima facie* presumption that the first-named allegation is true, and the rule is equally well settled that that presumption, in the absence of satisfactory proof to the contrary, is sufficient to entitle the party instituting the suit to recover for the alleged violation of the exclusive rights secured to him in the letters patent.

Availing themselves of that rule of law the complainants in this case introduced the five several letters patent on which the suit is founded, and they contend, and well contend, that their effect as evidence is to cast the burden of proof upon the respondents to show that the respective patentees are not the original and first inventors of the improvements embodied in the several letters patent, as they have alleged in their answer.

Parties defendants, sued as infringers, are not allowed in an action at law to set up the defense of a previous invention, knowledge, or use of the thing patented, unless they have given notice of such a defense thirty days before the trial, and have stated in the notice "the names and places of residence of those whom they intend to prove to have possessed a prior knowledge of the thing, and where the same had been used;" and the settled practice in equity is to require the respondent, as a condition precedent to such defense, to give the complainant substantially the same information in his answer. *Agawam Company v. Jordan*, 7 Wallace, 596; *Teese v. Huntingdon*, 23 Howard, 10.

Notices of the kind were given by the respondents in this case, but it will be more convenient to examine certain special defenses set up in the answer before entering upon that inquiry, as the decree must be affirmed, in any event, if any one of those defenses is well founded, whether the issues of novelty and of infringement are determined in favor of the complainants or respondents.

All of the special defenses apply to the original patent, as well as to those which have been reissued, except such as are founded upon the acts or omissions of the Commissioner in granting the

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reissues, which of course are not applicable to the former. They are eight in number, as exhibited in the answer, the respondents alleging in each that the letters patent are void and of no effect for the reasons therein set forth; and they will be briefly examined in the order in which they are pleaded.

1. That the letters patent are void and of no effect because the patentees did not make oath, before the patents were granted, that they did verily believe that they were the original and first inventors of the improvements for which the letters patent were solicited.

Congress possesses the power to pass laws to secure to inventors, for limited times, the exclusive right to their inventions, and Congress, in pursuance of that article of the Constitution, has conferred the power to grant letters patent for that purpose upon the Commissioner of Patents. Persons who have made an invention, and who desire to obtain an exclusive property therein, may make application in writing to the Commissioner of Patents, and the provision is that the Commissioner, on due proceedings had, may grant a patent for the said invention.

Inventors of machines are required, before they receive a patent, to deliver a written description of their inventions, and of the manner and process of making, constructing, and using the same, in such "full, clear, and exact terms" as to enable any person skilled in the art or science to make, construct, and use the same, and fully to explain the principle by which the invention may be distinguished from others of like kind; and they are also required to specify and point out the part, improvement, or combination which they claim as their invention.

Doubtless these several requirements may be regarded as conditions precedent to the right of the Commissioner to grant the application, as they must appear on the face of the letters patent, and are always open to legal construction as to their sufficiency.

Drawings are also required in certain cases, and where the invention is such that it may be represented by a model, the applicant for a patent is required to furnish a model of the same; and the further requirement is that he shall make oath or affirmation that he does verily believe that he is the original and first inventor of the improvement for which he solicits a patent, and that he does not know that the same was ever before known or used.

Importance, it is conceded, must be attached to the latter requirement, but it is certain that the oath or affirmation may be taken elsewhere than before the Commissioner, as the same section provides that it "may be made before any person authorized by law to administer oaths." 5 Stat. at Large, 119.

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Extended examination of the question, however, is unnecessary, as every one of the letters patent on which the suit is founded contains the recital that the required oath was taken before the same was granted, and the court is of the opinion that those recitals, in the absence of fraud, are conclusive evidence that the necessary oaths were taken by the applicants before the letters patent were granted.

2. That the letters patent are void and of no effect because the patentees did not specify and point out in their specifications and claims the parts, improvements, or combinations which they claim as their respective inventions.

Grant the theory of fact assumed in the proposition and the conclusion would follow, but the whole theory of the proposition as applied to the present case is founded in error.

Inventions secured by letters patent sometimes, though rarely, embrace an entire machine, and in such cases it is sufficient if it appear that the claim is coextensive with the invention. Other inventions embrace only one or more parts of a machine, as the coulter of a plough, or the divider or sweep-rake of a reaping machine; and in such cases the part or parts claimed must be specified and pointed out so that constructors, other inventors, and the public may know how to make the invention, and what is withdrawn from general use.

Patented inventions are also made which embrace both a new ingredient and a combination of old ingredients embodied in the same machine. Even more particularity of description is required in such a case, as the property of the patentee consists, not only in the new ingredient, but also in the new combination, and it is essential that his invention shall be so fully described that others may not be led into mistake, as no other person can lawfully make, use, or vend a machine containing such new ingredient or such new combination. They may make, use, or vend the machine without the patented improvements, if it is capable of such use, but they cannot use either of those improvements without making themselves liable as infringers.

Improvements in machines protected by letters patent may also be mentioned, of a much more numerous class, where all the ingredients of the invention are old, and where the invention consists entirely in a new combination of the old ingredients, whereby a new and useful result is obtained, and many of them are of great utility and value, and are just as much entitled to protection as those of any other class. *Union Sugar Refinery v. Matthiessen*, 2 Fisher's Patent Cases, 605.

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Such a combination is sufficiently described if the ingredients of which it is composed are named, their mode of operation given, and the new and useful result to be accomplished pointed out, so that those skilled in the art and the public may know the extent and nature of the claim, and what the parts are which co-operate to produce the described new and useful result. Tested by these rules, it is clear that the objection under consideration cannot prevail in respect to any one of the several letters patent on which the suit is founded.

3. That the reissued letters patent are void and of no effect, because the Commissioner of Patents never obtained jurisdiction to receive the surrender of the originals, nor to grant the reissues, as no evidence was produced before him to show that the originals were inoperative or invalid for any reason or cause whatsoever.

Whenever any patent is inoperative or invalid, by reason of a defective or insufficient description or specification, if the error arose by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it is lawful for the Commissioner, upon the surrender to him of such patent, and of the payment to him of a certain duty, to cause a new patent to be issued to the inventor for the same invention for the residue of the term then unexpired, in accordance with the patentee's corrected description and specification. 5 Stat. at Large, 122.

Whether adjudged to be valid or invalid, it is clear that the several reissued letters patents are all in due form, and that they contain all the usual recitals asserting a compliance with the requirements specified in the patent act, and it is equally certain that the respondents did not introduce any proofs to establish the theory of fact assumed in the answer.

Authority to accept the surrender of original patents in certain cases, and to grant new patents to the inventor, was conferred upon the Commissioner by the act of the 3d of July, 1832, and in a case arising under that act it was held by this court, more than thirty years ago, that where an act was to be done or a patent granted, upon proofs to be laid before a public officer, upon which he was to decide, the fact that such public officer had done the act or granted the patent was *prima facie* evidence that the proofs had been regularly made, and that they were satisfactory, even though the patent did not contain any recitals that the prerequisites to the grant had been fulfilled; and such continued to be the rule until the question came up again for consideration under the existing patent act, when it was held by this court that the fact of the granting of the reissued patent closed all inquiry into the existence

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of inadvertence, accident, or mistake, and left open only the question of fraud for the jury. *Railroad v. Stimpson*, 14 Peters, 458; *Stimpson v. Railroad*, 4 Howard, 384; 4 Stat. at Large, 559.

Since that time it has been definitely settled that neither reissued nor extended patents can be abrogated by an infringer, in a suit against him for infringement, upon the ground that the letters patent were procured by fraud in prosecuting the application for the same before the Commissioner. *Rubber Company v. Goodyear*, 9 Wallace, 797; *S. C.*, 2 Clifford, 375.

Where the Commissioner accepts a surrender of an original patent and grants a new patent, his decision in the premises, in a suit for infringement, is final and conclusive, and is not re-examinable in such a suit in the Circuit Court, unless it is apparent upon the face of the patent that he has exceeded his authority, that there is such a repugnancy between the old and the new patent that it must be held, as matter of legal construction, that the new patent is not for the same invention as that embraced and secured in the original patent. *Battin v. Taggart*, 17 Howard, 83; *O'Reilly v. Morse*, 15 Id., 111, 112; *Sickles v. Evans et al.*, 2 Clifford, 222; *Allen v. Blunt*, 3 Story, 744.

4. That the reissued letters patent are void and of no effect because they were not granted for the same invention as that embodied in the original letters patent, nor for any invention made by the patentees before the original letters patent were granted.

Reissued letters patent must, by the express words of the section authorizing the same, be *for the same invention*, and consequently where it appears on a comparison of the two instruments, as matter of law, that the reissued patent is not for the same invention as that embraced and secured in the original patent, the reissued patent is invalid, as that state of facts shows that the Commissioner, in granting the new patent, exceeded his jurisdiction. Power is unquestionably conferred upon the Commissioner to allow the specification to be amended if the patent is inoperative or invalid, and in that event to issue the patent in proper form; and he may, doubtless, under that authority, allow the patentee to redescribe his invention and to include in the description and claims of the patent not only what was well described before but whatever else was suggested or substantially indicated in the specification or drawings which properly belonged to the invention as actually made and perfected. Interpolations of new features, ingredients, or devices, which were neither described, suggested, nor indicated in the original patent, or Patent Office model, are not allowed, as it is clear that the Commissioner has no jurisdiction to grant a re-

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issue unless it be for the same invention as that embodied in the original letters patent, which necessarily excludes the right on such an application to open the case to new parol testimony and a new hearing as to the nature and extent of the improvement, except in certain special cases, as provided in a recent enactment not applicable to the case before the court. 16 Stat. at Large, 206; *Cahart et al. v. Austin*, 2 Clifford, 536; *Curtis on Patents*, (3d ed.,) 276; *Woodworth v. Stone*, 3 Story, 753.

Corrections may be made in the description, specification, or claim where the patentee has claimed as new more than he had a right to claim, or where the description, specification, or claim is defective or insufficient, but he cannot under such an application make material additions to the invention which were not described, suggested, nor substantially indicated in the original specifications, drawings, or Patent Office model.

Prior to the decision of this court that a person sued as an infringer cannot abrogate a reissued or extended patent by showing that the Commissioner had been induced to grant it by fraudulent representations, it had sometimes been supposed that every such new patent was open to that defense and that the question was one of fact dependent upon evidence, but since it has been determined that such a party cannot be heard to make such a defense to the charge of infringement, it has come to be regarded as the better opinion that all matters of fact involved in the hearing of an application to reissue a patent, and in granting it, are conclusively settled by the decision of the Commissioner granting the application. Matters of construction arising upon the face of the instrument are still open, but all matters of fact connected with the surrender and reissue are closed in such a suit by the decision of the Commissioner in granting the reissued patent. *Rubber Co. v. Goodyear*, 9 Wallace, 796; *Stimpson v. Railroad*, 4 Howard, 404; *Railroad v. Stimpson*, 14 Peters, 458.

Letters patent reissued for an invention substantially different from that embodied in the original patent are void and of no effect, as no jurisdiction to grant such a patent is conferred by any act of Congress upon the Commissioner, and he possesses no power in that behalf except what the acts of Congress confer. Whether a reissued patent is for the same invention as that embodied in the original patent or for a different one is a question for the court in an equity suit to be determined as a matter of construction, on a comparison of the two instruments, aided or not by the testimony of expert witnesses, as it may or may not appear that one or both may contain technical terms or terms of art requiring such assistance in

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ascertaining the true meaning of the language employed. *Sickles v. Evans et al.*, 2 Clifford, 203.

Where the specification and claim, both in the original and reissued patents, are expressed in ordinary language, without employing any technical terms or terms of art, the question whether the reissued patent is for the same invention as that described in the original patent or for a different one is purely a question of construction, but where both or either contain technical terms or terms of art the court may hear the testimony of scientific witnesses to aid the court in coming to a correct conclusion. Cases doubtless arise where the language of the specification and claim, both of the surrendered and reissued patents, is so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning. Both parties in such a case would have a right to examine such witnesses, and it would undoubtedly be error in the court to reject the testimony, but the case before the court is not of a character to render it expedient to pursue the inquiry. *Bischoff v. Wethered*, 9 Wallace, 814; *Betts v. Menzies*, 4 Best & Smith, Q. B. 999.

Apply the rule to the present case, that the question is one of construction, and it is clear that the defense under consideration is not open to the respondents, as they did not introduce in evidence the original letters patent from which the reissued patents were derived.

Persons owning reissued letters patent, and seeking redress from those who have evaded their exclusive rights, are not obliged to introduce in evidence the surrendered patent, and, if the old patent is not introduced by the party sued, he cannot have the benefit of such a defense.

5. That the several letters patent are void and of no effect because the claims therein patented are for an effect, and not for any particular machinery.

Founded, as the defense is, upon an obvious misconstruction of the claims of the several patents, it does not seem to require much explanation. Omit the words "substantially as described," or "substantially as set forth," and the question presented would be a very different one; but inasmuch as those words, or words of equivalent import, are employed in each of the claims, the defense is without merit. Where the claim immediately follows the description of the invention, it may be construed in connection with the explanations contained in the specifications, and where it contains words referring back to the specifications, it cannot properly

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be construed in any other way. *Curtis on Patents*, (3d ed.), §§ 225-227.

6. That the several reissued letters patent are void and of no effect because the claims therein made are too broad, and embrace that of which the patentees were not the original and first inventors prior to the granting of the original letters patent.

Properly understood, the defense is substantially the same as that set up in the fourth defense, and it must be overruled for the same reasons, which need not be repeated.

7. That the several letters patent are void and of no effect because what is claimed therein as new was in public use, with the consent and allowance of the original patentees, more than two years before they applied for the several patents.

Such a defense set up in a case where the complainants file the general replication is of no avail unless sustained by proof, and the respondents did not introduce any proofs to sustain it, which is all that need be said upon the subject.

8. That the combination claimed in each of the several letters patent is a combination of old parts, the combining of which involved no invention, but merely the skill of an intelligent mechanic or other person skilled in the manufacture and use of harvesting machines.

Reduced to a proposition, the defense, as set up in the answer, is that the several improvements were old, and not patentable on that account, as no improvements were made which required invention. Specific objection is made under this head to each of the four reissued letters patent, but the grounds of the several objections are substantially the same, so that the several propositions may be considered together.

New and useful machines are the proper subjects of an application for a patent, and so, by the express words of the act of Congress, are new and useful improvements on any machine. All of the patents embraced in the suit fall under the second clause of the provision, and are of the fourth class of patents before described—that is, they consist of a new combination of old elements whereby a new and useful result is obtained.

Particular changes may be made in the construction and operation of an old machine so as to adapt it to a new and valuable use not known before, and to which the old machine had not been, and could not be, applied without those changes, and, under those circumstances, if the machine, as changed and modified, produces a new and useful result, it may be patented, and the patent will be upheld under existing laws. *Bray v. Hartshorn*, 1 Clifford,

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541; *Losh v. Hague*, 1 Webster's Patent Cases, 207; *Hindmarsh on Patents*, 95; *Phillips v. Page*, 24 Howard, 166; *Norman on Patents*, 25.

Such a change in an old machine may consist merely of a new and useful combination of the several parts of which the old machine is composed, or it may consist of a material alteration or modification of one or more of the several devices which entered into its construction; and whether it be the one or the other, if the change of construction and operation actually adapts the machine to a new and valuable use not known before, and it actually produces a new and useful result, then a patent may be granted for the same, and it will be upheld as a patentable improvement. *Park v. Little*, 3 Washington Circuit Court, 196.

Improvements for which a patent may be granted must be new and useful within the meaning of the patent law, or the patent will be void; but the requirement of the patent act in that respect is satisfied if the combination is new and the machine is capable of being beneficially used for the purpose for which it was designed, as the law does not require that it should be of such general utility as to supersede all other inventions in practice to accomplish the same object. *Lowell v. Lewis*, 1 Mason, 182; *Bedford v. Hunt*, Id., 302; *Many v. Jagger*, 1 Blatchford, 372; *Barrett v. Hall*, 1 Mason, 447.

Unsuccessful in those defenses the respondents in the next place attack the respective inventions as destitute of originality, and allege that the patentees were not the original and first inventors of the several improvements supposed to be secured in the letters patent. Separate defenses of the kind are set up in the answer to each of the letters patent, but the nature and character of the objections are such that the whole series may properly be considered together.

Prior notice in the answer is required in such a case as a condition precedent to the right to introduce proofs to support such a defense, and it is certainly proper that the respondent should be allowed to comply with that requirement, but it is an abuse of the privilege to give such notices without some reason to suppose that such a defense can successfully be made, and that the proofs, if required, can be obtained, as it exposes the complainant to unnecessary expense and trouble in preparing his case for trial. Where no proofs were introduced in support of the answer no mention will be made of the notices, as a notice without proof to support it is of no avail.

Out of all the alleged prior inventions set up in the answer only

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four were made the subject of proof to any substantial extent. Two of these are the inventions of Obed Hussey and of Thomas D. Burrall, of the combination of the quadrant-shaped platform located behind the cutting apparatus. Those patents were introduced as tending more particularly to supersede the reissued patent number seventy-two, before described.

Strong doubts are entertained whether any of the patents given in evidence by the respondents as superseding the particular patent of the complainants, involved in this issue, are of a character to have that effect, even if the inventions which they purport to secure were of prior date, but it is not absolutely necessary to decide that point, except as to one of the exhibits, as the court is of the opinion that none of the others antedate the invention secured in that patent. Conclusions are all that will be useful on this branch of the case, especially as the question is one of fact dependent upon the proofs, which are somewhat conflicting, and where a full analysis of the evidence would hardly be practicable, as it would extend the opinion to an unreasonable length.

Proofs entirely satisfactory to the court are exhibited by the complainants showing that their invention, as described in the patent in question, was perfected early in the summer of 1849, as a material part of a harvesting machine, and that the same was reduced to practice as an operative machine during the harvesting season of that year.

Hussey, from 1839 or earlier to the time of his death, in the summer of 1860, was much engaged in the manufacture of reaping machines of various kinds. Most of his machines, however, were constructed without any reel and with square platforms, so as to drop the cut grain at the rear of the platform, differing so widely from the patented machine of the complainants as to require no argument to show that they afford no support to the present defense. Other machines were constructed by him with a straight guide-board on the platform, which was adjustable within certain limits, and the apparatus was doubtless capable, to a limited extent, of causing the cut grain to be moved sufficiently out of the path of the machine to give room for a single team.

Evidence to show that the invention of the complainants is embodied in those machines is entirely wanting, and it is quite clear that if any such had been introduced it could not have been credited, as the differences between them are too palpable and material to be overcome by parol evidence. Machines were also made by him with two platforms, or with a platform in two parts, the one being attached to the rear of the other, but it required two men

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to do the work which, with the complainants' machine, is easily and much better accomplished by one, which is certainly all the explanation which need be given of those machines in the present case.

Apart from these he also made one experimental machine, with a square platform, to which was bolted an angular addition, giving the whole, when the addition was attached, an angular form. Examined when the addition is bolted to the main platform, irrespective of the other ingredients of the combination, it approaches much nearer to the invention of the complainants than any of the other exhibits introduced in evidence by the respondents. Conceding all that, still it would not be difficult to show that the two are substantially different in several respects; but it is unnecessary to enter that field of inquiry, as the proofs are entirely satisfactory to the court, that the machine, as constructed, was merely an experiment, and that it was never reduced to practice as an operative machine. Undoubtedly it was built in the autumn of 1848, subsequent to the close of the harvest season; but the respondents' testimony shows that it was not used for cutting grain during that harvesting season.

Some obscurity surrounds its early history, nor is it of much importance that it should be better known. It appears that it was sent to the railroad depot to be transported to some other place for trial; but there is no positive evidence that it was ever forwarded or used, or that it was capable of any beneficial use. Where it was transported, if at all, from the depot, does not appear; but it does appear that it was returned the next year to the shop of the maker, and that it was set against the wall by the side of the street, in front of the shop, where it remained for some time; that it was then removed to the new shop of the maker, where it remained until it was taken to pieces and broken up by his order, and never restored till long subsequent to the complainants' patent.

Original and first inventors are entitled to the benefit of their inventions if they reduce the same to practice, and seasonably comply with the requirements of the patent law in procuring letters patent for the protection of their exclusive rights. Crude and imperfect experiments are not sufficient to confer a right to a patent; but in order to constitute an invention, the party must have proceeded so far as to have reduced his idea to practice, and embodied it in some distinct form.

Desertion of an invention consisting of a machine, never patented, may be proved by showing that the inventor, after he had

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constructed it, and before he had reduced it to practice, broke it up as something requiring more thought and experiment, and laid the parts aside as incomplete, provided it appears that those acts were done without any definite intention of resuming his experiments, and of restoring the machine with a view to apply for letters patent. *Johnson v. Root*, 2 Clifford, 123; *Gayler v. Wilder et al.*, 10 Howard, 498; *Parkhurst v. Kinsman*, 1 Blatchford, 494; *White et al. v. Allen et al.*, 2 Clifford, 230.

He is the first inventor in the sense of the patent law, and entitled to a patent for his invention, who first perfected and adapted the same to use, and it is well settled that until the invention is so perfected and adapted to use it is not patentable under the patent law. *Washburn v. Gould*, 3 Story, 122; *Cahoon v. Ring*, 1 Clifford, 612.

Argument is hardly necessary to show that nothing else introduced in evidence by the respondents as having been constructed by that inventor is of a character to interfere, in any substantial respect, with the novelty of the invention held by the complainants, as the weight of the evidence plainly tends to disprove the allegations of the answer, and the inferences to be drawn from a comparison of the exhibits would establish the opposite theory even if the other proofs were less decisive to that effect.

Prior invention by Thomas D. Burrall is the next defense set up by the respondents to the particular patent under consideration. They attempt to show that he constructed a harvesting machine having a square platform, to which he attached an apron, quadrant formed, which would deliver the cut grain, heads foremost, at the side of the machine and out of the way of the team in cutting the next swath.

Concede the fact that the machine, together with the circular apron, was constructed by the person named as alleged, and that the machine in that form antedates the invention held by the complainants, still the court is of the opinion that it is not of a character to defeat the complainant's patent, as it had no reel, was not a self-raker in any view of the case, and consisted beyond doubt of a substantially different combination. Compared with that, the invention described in the complainant's patent is both new and useful, and is plainly sufficient to support a patent as a new arrangement.

Suppose it to be otherwise, still the conclusion as to this defense must be the same, as the court is unhesitatingly of the opinion from the proofs that the supposed inventor did not construct the circular apron, and attach the same to the square platform, and use the two

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in conjunction until after the complainant's invention was perfected and reduced to practice as an operative machine.

Evidence was also introduced by the respondents respecting the invention of Nelson Platt, but extended discussion upon that topic is unnecessary, as it is hardly contended by the respondents that the machine contains a quadrant-shaped platform with, and immediately behind, the cutting apparatus, and in such relation to the main frame as that described in the specification of the complainant's patent. They appear to shrink from that proposition, which is the only one involved in this defense, and seek shelter under another, of a very different character, which is that the difference between the two is so very slight that it required no invention to pass from the former to the latter, which is a matter appertaining to another head of the defense that has previously been fully considered and the point distinctly overruled.

Properly understood, that machine does not contain a combination of the quadrant-shaped platform with the cutting apparatus in any practical sense. On the contrary, it has a square platform combined with the cutting apparatus, and the quadrant-shaped platform is combined with the square platform; nor does it contain any quadrant-shaped platform to receive the grain as it falls, but the ingredients of the invention, as well as the combination, are different from those in the complainant's machine, and the mode of operation is also different, which is all that need be said in response to that defense.

Substantially the same defenses were also set up to the other reissued letters patent, to the extent that those patents were put in issue in the pleadings, but it will not be necessary to restate the objections to their originality nor to present any response to the same, as to do so would only be to repeat what has been said in respect to the one more particularly assailed in argument.

Attempt is also made to show that the original letters patent described in the bill of complaint are also invalid, because the patentees are not the original and first inventors of the improvements therein secured. Whether they were or were not the original and first inventors of the improvement in the first claim is a matter of no importance in this case, as the pleadings do not put that claim in issue. They only put in issue the second claim, which embodies the described method of hanging the reel so as to dispense with any post or reel-bearer next to the standing grain, to prevent the grain from getting caught between the divider and the reel-supporter, and the only evidence introduced of prior invention is what is contained in an article published in London, in

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the Mechanics' Magazine. Expert witnesses were examined in respect to it by both sides. One examined by the respondents testified that he did not understand that it had any reel-support on the grain side of the machine, which in that respect is like the machine of the complainants, but three expert witnesses examined by the complainants testify that neither the description nor the drawings of the same, as exhibited in that magazine, show anything which is embodied in the complainants' patent, and the court is of the same opinion.

Patented inventions cannot be superseded by the mere introduction of a foreign publication of the kind, though of prior date, unless the description and drawings contain and exhibit a substantial representation of the patented improvement, in such full, clear, and exact terms as to enable any person skilled in the art or science to which it appertains, to make, construct, and practice the invention to the same practical extent as they would be enabled to do if the information was derived from a prior patent. Mere vague and general representations will not support such a defense, as the knowledge supposed to be derived from the publication must be sufficient to enable those skilled in the art or science to understand the nature and operation of the invention, and to carry it into practical use. Whatever may be the particular circumstances under which the publication takes place, the account published, to be of any effect to support such a defense, must be an account of a complete and operative invention capable of being put into practical operation. Webster's Patent Cases, 719; Curtis on Patents, (3d ed.,) § 278a; *Hill v. Evans*, 6 Law Times, N. S. 90; *Betts v. Menzies*, 4 Best & Smith, Q. B. 999.

None of these defenses, however, were sustained in the court below, but the circuit judges were of the opinion that the proofs failed to show that the respondents had infringed the letters patent of the complainants.

Actual inventors of a combination of two or more ingredients in a machine, secured by letters patent in due form, are entitled, even though the ingredients are old, if the combination produces a new and useful result, to treat every one as an infringer who makes and uses or vends the machine to others to be used without their authority or license. *Pitts v. Whitman*, 2 Story, 619; *Ames v. Howard*, 1 Sumner, 487.

They cannot suppress subsequent improvements which are substantially different, whether the new improvements consist in a new combination of the same ingredients, or of the substitution of some newly-discovered ingredient, or of some old one, performing

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some new function not known at the date of the letters patent, as a proper substitute for the ingredient withdrawn from the combination constituting their invention. Mere formal alterations in a combination in letters patent, however, are no defense to the charge of infringement, and the withdrawal of one ingredient from the same and the substitution of another which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination if the ingredient substituted performs substantially the same function as the one withdrawn.

Patentees, therefore, are entitled in all cases to invoke to some extent the doctrine of equivalents, but they are never entitled to do so in any case to suppress all other substantial improvements, and the rule which disallows such pretensions, if properly understood and limited, is as applicable to the inventor of a device, or even of an entire machine, as to the inventor of a mere combination, except that the inventor of the latter cannot treat any one as an infringer whose machine does not contain all of the material ingredients of the prior combination, as in that state of the case the subsequent invention is regarded as substantially different from the former one, unless the latter machine employs as a substitute for the ingredient left out to perform the same function some other ingredient which was well known as a proper substitute for the same when the former invention was patented. *Prouty v. Ruggles*, 16 Peters, 341; *Johnson v. Root*, 2 Clifford, 123.

Bona fide inventors of a combination are as much entitled to suppress every other combination of the same ingredients to produce the same result, not substantially different from what they have invented and caused to be patented, as any other class of inventors. All alike have the right to suppress every colorable invasion of that which is secured to them by their letters patent, and it is a mistake to suppose that this court ever intended to lay down any different rule of decision. Guided by these rules the remaining question for the determination of the court is whether the respondents have infringed the several patents described in the bill of complaint.

Infringement is alleged by the complainants, and the burden is upon them to prove the allegation, as it imputes a wrongful act to the respondents. All controversy as to the character of the machines made and sold by the respondents is closed by their admission set forth in the record. Exhibit six, it is conceded by the respondents, is an accurate representation of the machines which they made and sold, and the complainants accept the admission as

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correct. Absolute certainty, therefore, attends that inquiry, and there is very little, if any, more difficulty in ascertaining the construction of the patented machines made and furnished to the public by the complainants, so that the only substantial inquiry is whether the machines made and sold by the respondents infringe the patented machines of the complainants, as the latter embody all the inventions of the complainants, except the claims pointed out as not infringed, and the proofs satisfy the court that the exhibits are constructed in accordance with the mechanism described in the several letters patent.

Properly construed the reissued patent number four is the combination of a quadrant-shaped platform located behind the cutting apparatus of the harvester so as to receive the grain as it falls after it is cut, with an automatic sweep-rake so constructed as to sweep over the platform in circular curves, and to move forward and backward, or towards and from the cutting apparatus, so as to seize upon the grain as it falls, after being cut, sweeping it over the platform in circular curves and delivering it upon the ground behind the machine with its stalks at right angles, or nearly so, with the line of progression of the machine, and to return by a forward movement towards the cutting apparatus to the original position when the first operation commenced.

Number 1682 is divided into two parts, the first of which may be used without the second, and it is not charged that the second part has been infringed by the respondents. Briefly described it consists of a combination of the cutting apparatus of a harvester with a quadrant-shaped platform arranged in the rear thereof, and with a sweep-rake operated by mechanism in such a manner that its teeth are caused to sweep over the platform in curves when acting on the grain and to discharge the stalks crosswise to the direction of the swath and out of the way of the team on the return of the machine.

Two combinations are also contained in the reissued patent 1863, but the respondents are not charged with infringing the second, so that it is only necessary in this connection to refer to the first and describe its operation. It consists of a combination of the cutting apparatus with a reel and with a quadrant-shaped platform located in the rear of the cutting apparatus, operating as follows: The cutting apparatus severing the grain, the reel bearing the grain against the cutting apparatus and insuring its delivery upon the quadrant-shaped platform in the rear thereof, and the quadrant-shaped platform receiving the grain from the cutting apparatus and reel, and supporting it in such a manner that it can be moved

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from the cutting apparatus, heads foremost, swept round in a curve and discharged upon the ground crosswise to the direction of the swath and out of the track of the horses when the machine comes round to cut the next swath.

Patent numbered seventy-two is also an arrangement of the quadrant-shaped platform immediately behind the cutting apparatus of a reaping machine, so that the platform will receive the grain as it falls from the cutting apparatus, and will support it in such a manner that it may be swept round in a curvilinear path and discharged, heads foremost, upon the ground at the side of the platform out of the path of the horses when they return.

Reference will only be made to the second part of the original patent embraced in the suit, as it is not charged that the respondents have infringed the other claim. Separated from the second claim the first consists in a mode of hanging the reel in a reaping machine so as to dispense with any post or reel-bearer on the side next to the standing grain, without any projection of the reel-shaft or bearing therefor on that side of the machine, so that the reel overhangs the bearings on the one side and is without support on the other side.

Prior to the act of Congress allowing several patents to be issued for distinct and separate parts of the thing patented, it is not probable that a bill of complaint joining five several patents in the same charge of infringement would have escaped objection from the respondent, but it will be noticed that all the claims appertain to the same general subject, and that it requires all of the inventions in question to constitute a complete self-raking harvester or reaping machine, and that they are all embodied in machines which the complainants make and furnish to the public. Viewed in that light the court is of the opinion that the objection, if it had been made, could not have been sustained. 5 Stat. at Large, 192.

Where the invention or inventions are embodied in a machine the question of infringement is best determined by a comparison of the machine made by the respondent with the mechanism described in the complainant's patent or patents, where more than one is embraced in the same suit. *Blanchard v. Putnam*, 8 Wallace, 426.

Comparisons of the kind have been carefully made by the court, aided by the evidence of the expert witnesses, as exhibited in the record, and the court is of the opinion that the several inventions of the complainants, excepting the claims pointed out as not infringed, are embodied in the machines made and sold by the respondents. Two of the expert witnesses testify to that effect

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without qualification, and the reasons which they assign for that conclusion are, in the opinion of the court, decisive of the question. Some attempt was made in the cross-examination of those witnesses to elicit an answer that the sweep-rake employed by the respondents operated differently from the corresponding device of the complainants in the several reissued patents, but the attempt was wholly unsuccessful, and called forth explanations which confirm the conclusion that the two devices have substantially the same operation.

Special reference is made in the opinion of the district judge to the means employed by the respondents in supporting the reel, as showing that the machines which they have made and sold do not infringe the second claim of the original patent. His view is that their machines do not infringe that claim, because they do not employ but one reel-post instead of two, as shown in the complainants' patent, but it is so obvious that the one post with the frame attached to the upper end is substantially the same thing that it is not deemed necessary to pursue the argument.

For these reasons we are all of the opinion that the complainants are entitled to a decree that their several patents are valid, and for an account and for a perpetual injunction, except as to such, if any, as have expired.

DECREE REVERSED with costs, and the cause remanded for further proceedings

IN CONFORMITY TO THE OPINION OF THE COURT.

WHITELEY v. KIRBY.

(11 Wallace, 678.)

The inventions of Nelson Platt and of Alfred Churchill, patented, the former June 12, 1849, the latter March 3d, 1841, (harvester.) contained nothing which antedated the peculiar device secured by patent to Byron Dinsmore, February 10, 1852, for harvesting and mowing machines, assigned July 2, 1859, to Kirby and Osborn, and surrendered and reissued 28th January, 1862.

APPEAL from the Circuit Court for the Southern District of Ohio. Kirby and Osborn filed a bill in the court below against Whiteley and others, to enjoin them from infringing their patent, originally issued to Byron Dinsmore, February 10, 1852, assigned to them, the complainants, Kirby and Osborn, July 2, 1859, and surrendered and reissued 28th January, 1862. The court granted the injunction, and the defendants appealed.

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Mr. S. Fisher, for the appellants; Mr. David Wright, contra.

Mr. Justice NELSON delivered the opinion of the court.

The patent is for improvements in harvesting and mowing machines, and consists chiefly in this, namely: the construction and combination of two frames, the one for supporting the driving-wheel, and the other for supporting the cutting apparatus, and hinging the same together in such a manner that the driving-wheel and cutting apparatus may each follow the inequalities of the ground independently of each other, and to be bolted rigidly together for supporting the cutting apparatus at any desired height. After giving a description of the machine sufficiently exact and precise as to enable any one skilled in the art to construct it, the claim is as follows:

"The hanging of the driving-wheel in a supplemental frame, or its equivalent, which is hinged at one end to the main frame, whilst its opposite end may be adjusted and secured at various heights, or be left free, as desired, whereby the cutting apparatus may be held at any given height for reaping, or be left free to accommodate itself to the undulations of the ground, for mowing, as substantially described."

The surrender of this patent was made by the assignees on account of a defect in the claim, the patentee having failed to embrace within it the hanging of the driving-wheel in the supplemental frame, and its connections with the main frame to which the cutting apparatus is attached, and by means of which both the driving-wheel and cutting apparatus were made to follow the inequalities of the ground independently of each other. These devices were fully described in the specification, drawings, and model, and were embodied in the construction of the first machines. The patent, we have seen, was granted February 10, 1852. The first machine was built and successfully tried in the harvest of 1850. Twenty-one were made and sold the next year, (1851,) and fifty or sixty the year following, all entirely successful.

The defendants set up in their answer, and gave in evidence two patents for harvesters which they claimed antedated this invention of Dinsmore.

The first, Nelson Platt's, of La Salle county, Illinois, June 12, 1849; the second, Alfred Churchill's, Kane county, same State, March 3, 1841. There is no proof in the record in respect to these patents. Whether any machine was ever constructed under either of them, or went into practical use if constructed, or whether each were but an imperfect and abandoned experiment, are matters

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apparently regarded by the counsel who introduced them as of no great importance. Nothing appears to be known in respect to them, except that they were found among the records of the Patent Office, and have relation to the subject of grain harvesters. Whatever may have been their merit, however, as harvesters, they can have no material bearing that we can perceive upon this invention of the complainants, for, as it respects the peculiar device for which the present patent was granted, it is not to be found in either of them; neither in the specification or claims.

A rejected specification and drawing were also given in evidence of E. P. Covett, of Philadelphia, on the part of the defendants, on the point of novelty; but this was an application made to the Patent Office as late as 1852, two years after the invention of Dinsmore.

This closes all the evidence in the case on the question of novelty, and which requires no further comment.

The only remaining question is as to the infringement. The defendants' answer itself goes far towards making out an infringement, stripped of the coloring generally given to a case stated in the pleadings. It is admitted, the defendants' harvester is constructed with a main frame which carries the working parts of the machine—that is, the cutting apparatus—and to this main frame is attached a secondary (supplemental) frame, which carries the driving-wheel. The secondary frame, it is said, is not left free to play up and down, but is prolonged beyond the driving-wheel to a standard in the form of an arc, that rises from the rear of the main frame. This standard is provided at various heights with holes, which secure said secondary frame, and with it, the axle of the driving-wheel, at certain fixed distances above the main frame. Defendants say that their driving-wheel is not hung upon a crank shaft, and that their main and secondary frames are hinged in the opposite direction from that in which they are attached in the machine patented to Dinsmore. We have a model of the defendants' machine before us, and the above is a pretty fair description of it; and it will be seen to embrace every substantial element found in the construction and arrangement of the Dinsmore machine. There are the two frames, the main and secondary, or supplemental, the one supporting the cutting apparatus, the other the driving-wheel, hinging the two frames together in such a way that the driving-wheel and cutting apparatus may each follow the inequalities of the ground independently of each other, and may also be bolted rigidly together for supporting the cutting apparatus at any fixed height. Every advantage in reaping or mowing uneven

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or stony ground by the new and peculiar device of Dinsmore in the construction and arrangement of his machine, is found in that of the defendants. The form in some parts is changed, their two frames are hinged at different ends, different names are given to the same things, and different mechanical arrangements in the gearing are used to produce corresponding results, and, as is claimed, better results, although we perceive no evidence of this in the record.

An expert, Mr. Young, an experienced machinist, engaged in building this class of machines, who had a model of the defendants before him, was inquired of if he found in its construction two powers—the one for supporting the driving-wheel, and the other for supporting the cutting apparatus? He answered that he did. He was inquired of if he found the two frames hinged together in such a manner that the driving-wheel and cutting apparatus may each follow the irregularities of the ground independently; and also, if they were bolted rigidly together for supporting the cutting apparatus at any desired height? He answered that he did. He was asked if he found the driving-wheel represented in the model as hung in a supplementary frame? He answered that he did. Also, if he found the supplementary frame hinged at one end to the main frame? He answered that he did, and that its opposite end could be adjusted at various heights, or left free, as desired. Do you find these several parts so constructed and arranged that the cutting apparatus may be held at any desired height for reaping, or be left free to accommodate itself to the undulations of the ground, for mowing? He answered he did.

Another witness, Mr. Dunning, supports in all respects the evidence above given; and there is no substantial contradiction of this account of the construction and arrangement of the defendants' machine.

There is a good deal of conflicting evidence on a point that is not at all controlling in the case, namely: whether the defendants' machine would work well in mowing without adjusting the wheel frame to the standard firmly at a given height. There are respectable witnesses on both sides of this question.

DECREE AFFIRMED.

RAILROAD COMPANY *v.* DUBOIS.

(12 Wallace, 47.)

1. Construction of Dubois's patent, of September 23d, 1862, "for building piers for bridges, and setting the same." Held, to be for a device or instrument used in a process, and not for the process itself.

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2. It is not a bar to an action for an infringement of a patent that before making his application to the Patent Office, the patentee had explained his invention orally to several persons, without making a drawing, model, or written specification thereof, and that subsequently, though prior to his application for a patent, the defendant had devised and perfected the same thing, and described it in the presence of the patentee, without his making claim to it.
3. Silence of a party works no estoppel, unless it has misled another party to his hurt.
4. The novelty of a patented invention cannot be assailed by any other evidence than that of which the plaintiff has received notice. Hence the state of the art, at the time of the alleged invention, though proper to be considered by the court in construing the patent, in the absence of notice, has no legitimate bearing upon the question whether the patentee was the first inventor.

ERROR to the Circuit Court for the District of Maryland.

Dubois brought suit against the Philadelphia, Wilmington, and Baltimore Railroad Company, for damages for an infringement of a patent granted to him September 23d, 1862, for "a new and useful improvement in the mode of building piers for bridges and other structures and setting the same." The alleged improvement was asserted to have been used by the company in building their railroad bridge across the Susquehanna at Havre de Grace.

In his specification, Dubois, the patentee, after reference to diagrams accompanying his schedule, thus described his inventions, referring to the diagrams by corresponding letters; herewith the diagrams themselves omitted, as occupying space, and not indispensably necessary to a comprehension of the invention.

"In the building and setting of piers for bridges and other structures in beds of rivers or streams, it has been found necessary, in most instances, to erect stationary coffer-dams at the points where the piers are to be located. This operation requires a water-tight chamber to be constructed up from the bed of the river, and then emptied of its water by a pumping process, before the building of the pier can be proceeded with. The expense and inconvenience of this operation, as well as that of all other modes of building and setting piers in rivers, greatly enhances the cost of building bridges.

"With my invention much of the inconvenience and expense thus incurred will be obviated, and a much firmer structure obtained.

"To enable others skilled in the art to perform with my invention, I will proceed to describe its construction and operation:

"To construct piers for a bridge across a river or stream from a solid foundation, by first driving long temporary piles into the bed of the stream, outside of a given space. These piles are left extending up above the surface of the water. Then either drive

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down between and near about the long piles other short piles or firmly imbed rock or other substantial material into the earth or river bed, and, if desirable, slip down over the piles one or more broad and heavy stones or timbers, and imbed the same firmly into the soil, so that they rest down upon the foundation, and form a flat surface. Next construct a strong timber or other suitable character of platform, and bolt to its upper side one section of a hollow rectangular or other desirable form of box or tube, which is used to incase and strengthen the pier; the said tube being composed of boiler-plate metal, or other suitable material, and its lower section having a bolting flange on its lower edge, running inward at right angles to its sides, so as to bolt horizontally to the platform. This platform and section of the tube are caulked and pitched, or cemented, so as to be water-tight at bottom and on all sides, except at top, where it is fully open. The first and several other sections of the tube should be strengthened laterally and longitudinally from sides and ends by means of strong rods.

"The structure should now be filled to slide down over the sustaining and guide piles by cutting vertical holes, corresponding with the shape of the piles, through the platform. The structure, when thus fitted to the piles and let down to the surface of the water, floats, by reason of its buoyancy. The upper ends of the piles are now framed together with ties, so as to stand firm. The preparatory steps for building and setting the pier having thus been consummated, and additional sections provided, so as to be brought into use as required, the stonemason commences to lay the solid pier within the floating coffer-dam, using for the purpose common stone, or other material deemed suitable. As soon as a sufficient height of mason work has been set in the first section to cause the structure to descend nearly level with the surface of the water, another section is bolted, or otherwise firmly fastened upon the top edge of the first, so as to give the proper buoyancy and safety for continuing the work. This done, the mason proceeds further with his work, and builds up the pier until it again becomes necessary to increase the buoyancy, when he bolts on other sections of boiler tubing, and proceeds with the building of the pier until the platform and pier rest down and become 'set' upon the foundation. He now finishes the pier above the water without using any more sections of tubing, and may, if he deems best, use fine-cut stone, or other finished material, or he may, if desirable, continue the tubing to the top of the pier, so as to obtain additional strength.

"When the pier is completed, the piles are sawed off just above

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the top of the platform, and their stumps, in connection with the weight of the pier, serve to prevent lateral movement of the platform and pier on its foundation.

"A metal sectional boiler-plate tube has been described as the casing for the pier, because such tube possesses great strength at small expense, and will serve to bind and support the masonry of the pier. It, however, is obvious that a floating water-tight coffer-dam, operating on the principle described, might be made of wood, or other material than boiler-plate metal, and when the pier is finished, the floating coffer-dam may be removed from around it, leaving the pier wholly uncovered from base to top. The removed structure may be used in erecting other piers, if desirable.

"I have given a minute description of means for carrying out my invention, but I do not wish to be confined to those means, but desire to be protected in the principle of operation embodied in a floating coffer-dam, substantially as described for building and setting piers for bridges and other structures.

"Having described one mode of carrying out my invention, what I claim and desire to secure by letters patent is:

"1st. Building and setting piers by means of a floating coffer-dam, substantially as set forth.

"2d. The use of the tube which constitutes the dam for incasing and strengthening the pier, substantially as set forth.

"3d. The guide-piles (A A) in combination with a floating coffer-dam, substantially as and for the purpose set forth."

The defendant pleaded three pleas.

1st. The general issue.

2d. That the letters patent were obtained by fraud and imposition on the Patent Office.

3d. Want of originality.

Issue was joined on the first plea, and on replications to the second and third.

At the trial it became a material question for what invention the patent was granted, and especially what the *first* claim of the patentee was intended to cover.* Was it a device, a structure, or an

* One portion of the company's evidence had tended to show that while it used a platform, it was not one perforated with holes, for the insertion of guide-piles; that while it had used an iron tube of boiler-metal plate, it was not a hollow tube with a bolting flange on its lower edge, so as to be bolted horizontally to the platform; that it had used no caulk, pitch, or cement; that its tube had an iron bottom, part of the tube itself; that while using the buoyancy of water, it had not used it in combination with the plaintiff's apparatus; that one pier had been guided by screws alone; that another had been partly lowered by fall and block, and guided by furring.

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instrument designed for use in a process, or was it a process itself? The defendants contended that the patent, so far as it covered the first claim, was for a process of building and setting piers, which process consisted of driving temporary piles in the bed of a stream outside of a given space, then preparing a suitable foundation for a pier, then making a strong timber, or other suitable character of platform, and bolting upon its upper surface a section of a hollow rectangular or other desirable form of box, to be made of boiler-plate metal, or other suitable material, strengthened laterally and longitudinally from sides and ends by means of strong rods, and fitted to slide down over the guide piles first driven, by cutting vertical holes through the platforms, then laying the masonry of the pier in this box, made water-tight, adding sections from time to time as the increasing weight of the masonry required, and as the box with its contents sunk, until the platform and pier, incased by the different sections of the box, rested and became set upon the foundation prepared, when the guide-piles are sawed off just above the top of the timber or other platform so that their stumps in connection with the weight of the pier may serve to prevent lateral movement of the platform and pier on the foundation. Holding such opinions of the nature of the invention, the defendants asked the court thus to construe the patent, and to instruct the jury that the words "substantially as described" in the specification, (when speaking of the "principle of operation" which the patentee desired to have protected,) and the words "substantially as set forth" in the first claim, refer to that process, and hence, that unless the defendants used that process as detailed, as well the platform, composing in part the floating coffer-dam fitted to slide down the guide-piles referred to, by cutting vertical holes through it, and sawing off the stumps of the piles just above the top of the platform, when the pier is completed, as also the other parts of the process claimed in the first claim, the plaintiff could not recover for an infringement of that claim. This instruction the court refused to give, construing the claim to be, not for a process, but for a device, or instrument to be employed in a process, the instrument being a floating coffer-dam constructed as described in the specification, in which the masonry of the pier might be laid and sunk to the foundation by its own gravity.

In construing the *second* and *third* claims, the court thus charged: *

* The company had introduced some evidence tending to show that one of its caissons was constructed on shore, and then floated to its place, and set on its foundation before any masonry was put in.

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"*The second claim of the plaintiff's patent is for the use of the tube or material of which the dam is made, for incasing and strengthening the pier; that is, it shall be so constructed that it can be used for the casing and strengthening the pier, no matter whether it be first placed in position entire, or be built in sections as the masonry progresses.*

"*The third claim of the plaintiff's patent is for a combination of a floating coffer-dam, as claimed in the first claim, with guide-piles, which are driven into the bottom of the river, around the site of the proposed pier, and reach above the surface of the water, and pass through holes in the platform, and have their tops framed together with ties; when the pier is building, they are to sustain and keep upright the tube with its pier inside, and to guide it down to its foundation prepared at the bottom of the river; when the pier is finished they are then to be cut off just above the top of the platform, and their stumps left to prevent any lateral movement of the platform and pier on its foundation."*

In the course of the trial, and in support of the plea that the letters patent were obtained by fraud and imposition, the testimony of one George A. Parker, the engineer of the railroad company, defendant in the case, by whom the bridge was designed and built, and of a certain Crossman, in the service of the company, and standing in some intimate subordinate relation to Parker, was given by the defendant, the object of which was to show that the plaintiff had fraudulently obtained his patent for what was in fact the invention of Parker. It tended to show that prior to 1861, Parker, a civil engineer since 1838, and who, as already stated, had built the bridge, in the laying of whose piers the alleged infringement consisted, had conceived the plan on which the piers in this bridge were laid, going to different places to look at large bridges, and making many experiments and investigations; all with a view to building the piers for this particular bridge. That in the spring of 1861, when work on the bridge had been begun, and estimates for iron in the piers had been received, Crossman informed Mr. Parker that "a man named Dubois, who had some notions about bridge building, wanted to see him." That Parker being willing to see him, some delay intervening, a time was fixed for an interview, and the man, this Dubois, introduced; that Dubois had previously told Crossman that he wanted to talk with Parker about the foundations of the Susquehanna bridge; that he himself, when thus speaking with Crossman about the foundations, described the cribwork for foundation, but never described sectional caissons; and that when afterwards introduced to Parker,

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he "described" a simple wooden structure, a crib made of raft timbers, put together in the ordinary way, in form of a parallelogram, to be built partly on shore and partly on the river. How he was to sink it, or how guide it to the bottom, Parker, the witness, did not remember: it was to be filled with rough stones, and was to sink as it was filled; that on this Parker asked Dubois if he was aware that his masonry would be torn away by the floods, to which Dubois replied that he would throw out ballast on the outside and bring it to the top of the pier. Parker then said, "Now, I will tell you my plan," and proceeded to describe it accordingly, when Dubois remarked, "I like your plan, all except the iron." Parker then replied that the iron was the only new thing about it, the especially valuable thing. Dubois then objected to the expense of iron, when Parker made a calculation showing that it would be cheap; Dubois then said, "Your plan is the best," and asked whether Parker could not give him something to do for the bridge, as he had a lumber yard and saw-mill at Havre de Grace. Parker promised to apply to him if there was any occasion, and they parted. In September Dubois got his patent. Afterwards meeting Dubois, Dubois said to him, "I understand you claim to be the inventor of this way of putting down the piers." To which Parker replied, "Don't speak to me again during your natural life. If you have any business with me or the company, do it through your lawyer." This was in the autumn of 1862.

On the other hand, Dubois himself being examined, testified that in June, 1862, when he asked Crossman to procure for him an interview with Mr. Parker, he described confidentially to Crossman his plan of building piers; that this plan was essentially the same as that adopted in the Susquehanna bridge; that being introduced some days afterwards to Parker, whom Crossman in the meantime had seen, in order ostensibly to get Parker's leave to introduce Dubois to him, Parker described to him, as his own, the same plan that he, Dubois, had described a few days before to Crossman, except that the same use was not made of the boiler iron. Dubois in giving his testimony proceeded: "Witness did not then state to Parker that the plan was his own, because from circumstances he felt sure that Crossman had disclosed it. Witness at once applied for and obtained a patent. Crossman being charged with having disclosed the plan to Parker denied it, and then said perhaps he did, and would think it over. At a subsequent interview he denied it."

Upon this part of the case the defendant's counsel—by one of his prayers for instructions, *the eighth*—asked the court to charge:

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"That if the jury should find that the plaintiff, in the spring of 1861, explained his invention to the witnesses who testified upon the subject, by verbal statements only, but without reducing the same to practice by making a drawing, model, or written specification thereof; and that, prior to the application of the plaintiff for a patent, Parker, the engineer of the defendants, superintending the construction of their bridge across the Susquehanna, had devised and perfected the plan afterwards pursued for building and setting the piers of the said bridge, and was actually engaged in preparing for the work of actual construction when, as testified by the said Parker, the plaintiff called on him and heard the plan described without making any claim thereto, but afterwards applied for and obtained the patent on which the present action is founded, then the plaintiff was not entitled to recover."

One of the pleas, having been as it will be remembered, want of originality, the defendants had given to the plaintiff this notice:

"Take notice, that at the trial of the above cause, evidence will be offered to show that you were not the original and first inventor in the improvement in the mode of building piers for bridges, for which letters patent of the United States were issued to you on the 23d September, 1862, but that a prior knowledge of the improvement aforesaid was had by the parties whose names and residences are given in a schedule hereto annexed,* and that the same had been used in the construction of the bridge of the defendants, across the Susquehanna river, between Havre de Grace and Perryville; and that the said improvement had been described in 'Mahan's Civil Engineering' anterior to your supposed invention; and further, as special matter, testimony will be offered to show that you surreptitiously and unjustly obtained your said patent for that which was in fact invented by George A. Parker, engineer of said bridge, who was using reasonable diligence in adapting and perfecting the same."

The notice was given in professed pursuance of the 15th section of the Patent Act of 1836, which enacts that a defendant may plead the general issue and after notice give evidence that the patentee was not the original and first inventor; or that the thing patented had been described in some public work anterior to the supposed discovery, or that the patentee had surreptitiously or unjustly obtained the patent for that which was in fact invented or discovered

*The names and residences of Parker, Crossman, and several other witness, were given in this schedule.

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by another who was using reasonable diligence in adapting and perfecting the same, "in either of which cases" the act declares that "judgment shall be rendered for the defendant." It proceeds:

"That whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, he shall state, in his notice of special matters, the names and places of residence of *those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used.*"

Testimony having been given tending to show want of originality, the defendant in his last prayer asked the court to instruct the jury:

"That, upon the issues joined, the question was open before them, whether the plaintiff was or was not the first and original inventor of the improvement described in the patent of the 23d September, 1862, offered in evidence; and that in considering the said question, the jury may and ought to consider the evidence in the cause in relation to the state of the art of building and setting piers known at the time of the alleged invention of the plaintiff described in said patent."

The court refused to give this instruction, but instructed the jury thus:

"In reference to the question, whether the plaintiff is the original and first inventor of the three claims made by him in his said patent, the jury have a right to take into consideration the knowledge which they may find to have been possessed, prior to the date of plaintiff's patent, by the several witnesses whose names are given in the notice of defense in this case, and who have been examined; and also the description of such constructions in 'Mahan's Civil Engineering,' and the patent of Parker, dated 6th September, 1864; and also all description of his invention made by plaintiff to any one prior to the date of his said patent, in the year 1861 or '62; and also to the conversation (whatever the jury may find that to have been) between the plaintiff and the engineer of defendants in 1862, prior to the date of plaintiff's application for a patent."

It also charged (in its sixth instruction) that if the jury found that the defendant had infringed, and that the plaintiff was the true inventor, they could, in ascertaining the actual damages the plaintiff had sustained, &c., take into consideration the state of the art at the time of the plaintiff's invention, its utility over old modes, and the saving which had accrued to the defendant.

Argument against the patentee.

The defendants now brought the case here, on error, for refusal to give the instructions asked, and on account of the instructions given.

Messrs. W. Schley and T. Donaldson, for the plaintiff in error:

1. The first claim is for the specified means of effecting the result of placing a pier in a stream in a condition of preparedness for the reception of the bridge. Those means embrace a floating coffer-dam, constructed, used, and guided, as described in the specification; and also embrace the specified devices and contrivances for constructing, using, and guiding, the said coffer-dam, up to the point of the completeness of the pier.

The language of the claim is for "building and setting piers." It is not for the coffer-dam, nor for the use of the coffer-dam separately, but for the use of the coffer-dam, described in the specification, constructed as therein mentioned, gradually lowered by the weight of the masonry, and guided, in its descent, by guide-piles, in the manner mentioned in the specification, all co-operating to produce the result to be accomplished, namely: building and setting a finished pier in a river or stream.

In the first paragraph of the specification, the patentee claims to have invented "a new and useful improvement in building piers for bridges and other structures, and setting the same." His first claim is for this improvement, and was intended to cover the whole.

In another part of the specification, after mentioning certain preparatory steps, he proceeds to show how the platform was to be constructed, the first section of the hollow tube to be bolted thereon, &c., "for the building and setting the pier;" and then follows a description of the whole process of building and lowering the pier in its gradual guided descent until, in his own language, "the pier rests down and becomes 'set' upon the foundation."

The first claim is for a process. A process may, undoubtedly, be the basis of a patent, where no part of the means employed, separately considered, is new, or claimed as new. The combination of co-operating constituent elements, so combined and operating as to produce a new and useful result, or a known result in a new and useful way, is patentable. In such a case, the patent stands upon the combination or process. *Prouty v. Draper*, 1 Story, 568; *Prouty v. Ruggles*, 16 Peters, 336, 341; *Davis v. Palmer*, 2 Brockenbrough, 298, 304; *McCormick v. Talcott*, 20 Howard, 405; *Vance v. Campbell*, 1 Black, 427.

In the construction given, as to this first claim, it is limited to so much of the process as is necessary to building the pier. It ignores

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the idea of a *process* for building and *setting*. It does not regard the *guide-piles*, as embraced by the first claim, nor the *holes* in the platform, as part of the means employed in the mode of accomplishing what he claims as his invention in this first claim.

In view of the evidence introduced by the defendant, (see it *supra*, p. 332, in note,) it was very material that the jury should have been properly instructed as to this first claim.

2. The second claim of the plaintiff is "for the use of the tube, which constitutes the dam for incasing and strengthening the pier, substantially as set forth."

The words "substantially as set forth" require that we should recur to the specification to see what sort of a tube is there described. And it seems to be plain that he claims a *sectional caisson*. His direction is, to bolt to the upper side of the platform "one section of a hollow rectangular box or tube." He speaks, again, of "the first and several other sections," and of "additional" sections.

But the court construes this claim as embracing the use of the tube, "whether it be first placed in position entire, or be built in sections as the masonry progresses." In this ruling the court, we think, was in error.

3. The eighth prayer of the defendant ought to have been granted. By the second plea, fraud and imposition, in the obtaining of the patent, were directly charged, and issue was joined on a replication to this plea. Strong evidence was given tending to show the alleged fraud. If found it would have been destructive of the patent.

On another ground the instruction should have been given. The testimony of Mr. Parker shows, and Dubois himself admits that, in the conversation between them, Dubois did not disclose the fact, if such was the fact, nor even pretend, that he was the inventor of the mode of building and setting bridges, which Parker, as the engineer of the defendant, intended to follow, in constructing and setting the piers. It is a strong case for the application of the doctrine of estoppel *in pais*. His silence was a justification to Mr. Parker in pursuing the course which he had explained to Dubois he intended to pursue. *Doe v. Oliver*, 2 Smith's Leading Cases, 417, and notes.

The last prayer was framed on the theory that the evidence in relation to the state of the art of building and setting piers, known at the date of plaintiff's patent, was proper to be considered by the jury upon the question whether the plaintiff was the first and original inventor of what he claimed as new. See *Vance v. Camp-*

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bell, 1 Black, 427. The court, in its sixth instruction, limited the consideration of the state of the art to the question of damages alone.

Messrs. W. H. Armstrong and S. Linn, contra.

Mr. Justice STRONG delivered the opinion of the court.¶

The court below, refusing to give the first instruction asked for by the defendants, construed the first claim in the plaintiff's patent to be, not for a process, but for a device, or instrument to be employed in a process, the instrument being a floating coffer-dam constructed as described in the specification, in which the masonry of the pier might be laid and sunk to the foundation by its own gravity. In this it is now insisted the court erred. We are of opinion, however, that the construction given to this claim was correct, and that the defendants were not entitled to an affirmative response to their prayer. Undoubtedly a patentee may claim and obtain a patent for an entire combination, or process, and also for such parts of the combination or process as are new and useful, or he may claim and obtain a patent for both. That this patentee did not intend by his first claim to appropriate the process of building and setting piers which he had previously described in his specification is made evident by several considerations. The words by which the claim is immediately preceded tend strongly to show this. The patentee had described the common method of building and setting piers, by a stationary coffer-dam built up from the bottom, out of which the water was pumped. The inconvenience and expense of this he proposed to obviate. He then added, "to enable others to perform *with* my invention, I will proceed to describe its *construction and operation*." Did he mean construction of a process? Following this was a description of a floating caisson, or coffer-dam, with all the details of its construction, and also of guide-piles, with a mode for their use in directing the coffer-dam in its descent with the pier to the foundation. He then added, "I have given a minute description of the means for carrying out my invention, but I do not wish to be confined to those means, [by which he plainly meant process,] but desire to be protected in the principle of operation embodied in a floating coffer-dam, substantially as described, for building and setting piers for bridges and other structures." This can hardly mean anything else than a claim for the principle of operating in building and setting piers through the instrumentality of a floating coffer-dam, substantially such as he had previously described. The language is awkward, but it is reasonably intelligible. It was not the principle of oper-

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ating by what was embodied in a process, such as had been described, that he desired to be protected in, but that embodied, or wholly contained, in a coffer-dam. This he had described as an improved substitute for a stationary dam. If it was not the method or process that he sought protection for, it is incredible that he would have described it as *embodied* (that is, collected into a whole) in one of the devices used in the process. Now, reading the first claim in connection with this language of the specification that immediately precedes it, we cannot doubt that the claim is for the instrument, or device, denominated a floating coffer-dam, substantially such as described in the specification, to be used in building and setting piers. It is clear the invention was regarded by the patentee as a different thing from the mode of using it. "Having," said he, "described one mode of carrying out my invention, what I claim and desire to secure by letters patent is, 1st, building and setting piers by means of a floating coffer-dam, substantially as set forth; 2d, the use of the tube which constitutes the dam for incasing and strengthening the pier, substantially as set forth; 3d, the guide-piles A A, in combination with a floating coffer-dam, substantially as and for the purpose set forth." If his intention was to claim the process, or a process substantially such as described in the specification, it was easy to say so, and it was worse than useless to mention only one of the means or instruments by which the process was conducted. Looking, also, at the third claim, which is plainly for a combination of devices, a combination of a floating coffer-dam with guide-piles, substantially as described, and for the purposes described, to wit, building and setting piers, it is evident the first claim was for the caisson, or coffer-dam. Why claim such a combination if the first claim was for a process of which the guide-piles and the floating dam were essential component parts?

At the argument much importance was attached, on behalf of the plaintiffs in error, to the fact that the language of the claim is, "building and *setting*" piers by means of a floating coffer-dam, and it was urged that, in the construction given to it by the court, the idea of "*setting*" the pier is ignored. But the setting of a pier by means of a floating dam is inseparable from the construction of a pier. It is a part of the process of building. The building consists in laying the masonry of the pier within the dam, causing it to descend by its own gravity towards the bottom until it reaches the foundation. This descent is the setting. The floating coffer is, therefore, an instrument not only for building, but for setting piers. Hence, if the claim was, as we think, for the floating dam

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alone, when used for the purpose designated, and not for its use in combination with the other devices, and with the process described in the specification, (what the inventor called "one mode of carrying out his invention,") it was well described as a means for building and setting piers.

The plaintiffs in error also complain that the court construed the second claim of the patent to be for the use of the tube, or material of which the dam is made, for incasing and strengthening the pier, no matter whether it be first placed in position entire or be built in sections as the masonry progresses. It is argued the claim embraced only an iron sectional tube or caisson. It is very manifest, however, that the construction given to it was right. The specification expressly describes the tube as "composed of boiler-plate metal or other suitable material," and, again, it states "that a floating water-tight coffer-dam, operating on the principle described, might be made of wood or other material than boiler-plate metal." It is equally plain that a tube composed of sections was not exclusively meant. The claim refers to the specification, and that explains both its construction and its possible use in strengthening the piers. By reference to it it will be seen that the tube is not necessarily constituted of several sections. Its formation is described to be, constructing a strong timber or other suitable character of platform, and bolting to its upper side one section of a hollow rectangular, or other desirable form of box or tube, which is used to incase or strengthen the pier, the tube being composed of boiler-plate metal or other suitable material. This platform and section of the tube are then caulked and pitched, or cemented, so as to be water-tight at bottom and on all sides, except at top, and strengthened, laterally and longitudinally, by means of strong rods. It is then complete and ready for all the uses for which it is designed. Sections are added only when required by the depth of the water, and when the tube has sunk in consequence of the masonry laid in it nearly to a level of the water surface, though, if desired, they may be continued to the top of the pier. There is nothing that would justify our holding that the claim demands a tube composed of more than one section. It is the use of the tube, whether longer or shorter, no matter what its shape or material, or of how many parts consisting, that the claim sought to cover.

What has been said is sufficient to show that, in our opinion, the Circuit Court did not misinterpret the first, the second, or the third claim of the patentee.

The next assignment of error, not disposed of by the observations we have already made, is, that the court refused to charge

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the jury as requested in the defendant's eighth prayer. (*Supra*, p. 336.) The theory of this prayer was twofold. The defendants had pleaded that the letters patent of the plaintiff were obtained by fraud and imposition on the Patent Office, and the prayer assumed that his not claiming the invention when Parker described his plan for building and setting the piers of the bridge established the fraud pleaded. The prayer also assumed that the plaintiff's silence, when Parker's plans were revealed, coupled with the facts that Parker was, at the time, preparing for the work of actual construction, that he subsequently proceeded with his plan, and that the plaintiff's patent was afterwards applied for and obtained, amounted to an estoppel *in pais*. It is impossible, however, to discover how the plaintiff's silence on the occasion mentioned tended at all to show a fraud upon the Patent Office, much less that it constituted a fraud in law, so as to justify the court in ruling that he could not maintain his action. And the defendants, when sued for an infringement, were not at liberty to set up as a defense that the patent had been fraudulently obtained, no fraud appearing upon its face. *Rubber Company v. Goodyear*, 9 Wallace, 788.

Nor was there any case presented by the prayer that amounted to an estoppel. No principle is better settled than that a party is not estopped by his silence unless it has misled another to his hurt. *Hill v. Epley*, 7 Casey, 334. There was no evidence of any such misleading stated in the prayer or found in the case. The patent was granted September 23, 1862. It nowhere appears that before that day the defendants had expended one dollar in building their piers. Moreover, the point does not negative knowledge by Parker of the plaintiff's invention before the conversation of which it speaks took place; and there is some reason found in the evidence for believing that the plaintiff's plans had been revealed to Parker by Crossman, to whom the plaintiff had partially explained them, before that conversation. The court could not, therefore, have given the instruction asked, even if the plaintiff was under obligation to disclose his invention to Mr. Parker, which we are not prepared to assert.

The only remaining assignment of error is, that the court declined instructing the jury as requested, that in considering the question whether the plaintiff was or was not the first and original inventor of the improvement described in his patent, they might and ought to consider the evidence in the cause in relation to the state of the art of building and setting piers known at the time of the alleged invention of the plaintiff. Upon this subject the court did charge the jury that they had a right to take into consideration

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the knowledge which they might find to have been possessed, prior to the date of the plaintiff's patent, by the several witnesses whose names were given in the notice of defense, and who had been examined; and also the description of such constructions in Mahan's Civil Engineering, and the patent of George A. Parker, and also all description of his invention made by the plaintiff to any one prior to the date of his patent in 1861 or '62, and also the conversation (whatever they might find it to have been) between the plaintiff and the engineer of the defendants in 1862, prior to the date of the plaintiff's application for a patent. This was all the defendants had a right to ask. They had given notice of nothing more. They had not apprised the plaintiff that the novelty of his invention would be assailed by any other evidence than such as they had particularized in their notice of defense. While, therefore, evidence in regard to the state of the art was proper to be considered by the court in construing the patent and determining what invention was claimed, it had no legitimate bearing upon the question whether the patentee was the first inventor.

DECREE AFFIRMED.

UNITED STATES v. BURNS.

(12 Wallace, 246.)

1. The army regulation No. 1002, which declares that "no officer or agent in the military service shall purchase from any other person in the military service or make any contract with any such person to furnish supplies or services, or make any purchase or contract in which such person shall be admitted to any share or part, or to any benefit to arise therefrom," does not apply to contracts on behalf of the United States, which require for their validity the approval of the Secretary of War. The secretary, though the head of the War Department, is not in the military service in the sense of the regulation, but is a civil officer.
- 2 In February, 1858, a contract was made on behalf of the United States with Sibley, an officer in the army of the United States, for the manufacture and use of what is known as the Sibley tent, of which tent Sibley had secured a patent, by which contract the government was authorized to make and procure as many of the tents as it might require by paying the sum of five dollars for each tent, the contract to continue until the 1st of January, 1859, and longer unless the United States were notified to the contrary. In April, 1858, Sibley executed to Burns, another officer in the army of the United States, an assignment of "the one-half interest in all the benefits and net profits arising from and belonging to the invention," from and after February 22d, 1856. Soon after the commencement of the rebellion Sibley resigned his commission in the army of the United States and joined the Confederates. Burns remained true in his allegiance to the government of the United States and served in the army of the Union. After the resignation and defection of Sibley one-half of the royalty on each tent made or procured by the government was paid to Burns, under the contract with Sibley,

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until December 26th, 1861, when further payments to him were forbidden by order of the Secretary of War, although the government continued to manufacture and use the tents as previously: *Held*, 1st, that the assignment of Sibley passed to Burns one-half interest in the contract of Sibley with the government, and the right to a moiety of the royalty stipulated; 2d, that the order of the Secretary of War, in December, 1861, did not terminate the contract; 3d, that the War Department, by its previous payments to Burns of one-half of the royalty stipulated, severed his claim from that of Sibley under the contract; 4th, that the act of March 3d, 1863, in barring Sibley, by reason of his disloyalty, of any action upon the contract with the government in the Court of Claims, does not affect the rights of Burns to his moiety under that contract or his right of action for the same in the Court of Claims. The act severs their claims.

3. The Court of Claims, in deciding upon the rights of claimants, is not bound by any special rules of pleading.

APPEAL from the Court of Claims, in which court the petitioner claimed against the United States the amount due on a contract authorizing them to make and use a certain tent known as the Sibley tent.

The facts found by the court below were thus:

1st. On the 22d of April, 1856, letters patent were issued to Major H. H. Sibley for an improved tent, since known as the Sibley tent.

2d. On the 6th of February, 1858, General Thomas, assistant quartermaster general at Philadelphia, in a letter addressed to W. E. Jones, "agent for the Sibley patent tent," stated that he had received information from the quartermaster general that the tent might be adopted into the service, provided a satisfactory arrangement could be made for the use of the patent, or for the tents, at a reasonable rate, and proposed that the department should pay him the sum of \$5 for each tent made for the use of the army, *as long as the agreement might be confirmed by the War Department*, and asking a reply to the proposition. To this letter Mr. Jones replied that he was willing to enter into a temporary arrangement of that nature, and to authorize the assistant quartermaster to make as many of the tents as the government might require, by paying him \$5 for each tent; the arrangement to hold good *until the 1st of January, 1859, and longer, unless notified to the contrary by him*.

On the 18th of February, 1858, the terms proposed in the letter of Mr. Jones were approved by the Secretary of War, and a contract was made accordingly, between the United States and Jones, as the agent of the Sibley tent patent, by which the United States were authorized to make and procure as many of the tents as the government might require by paying \$5 for each tent, and this arrangement was to hold good until the 1st of January, 1859, and longer, unless the United States were notified to the contrary. And the

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the knowledge which they might find to have been possessed, prior to the date of the plaintiff's patent, by the several witnesses whose names were given in the notice of defense, and who had been examined; and also the description of such constructions in Mahan's Civil Engineering, and the patent of George A. Parker, and also all description of his invention made by the plaintiff to any one prior to the date of his patent in 1861 or '62, and also the conversation (whatever they might find it to have been) between the plaintiff and the engineer of the defendants in 1862, prior to the date of the plaintiff's application for a patent. This was all the defendants had a right to ask. They had given notice of nothing more. They had not apprised the plaintiff that the novelty of his invention would be assailed by any other evidence than such as they had particularized in their notice of defense. While, therefore, evidence in regard to the state of the art was proper to be considered by the court in construing the patent and determining what invention was claimed, it had no legitimate bearing upon the question whether the patentee was the first inventor.

DECREE AFFIRMED.

UNITED STATES v. BURNS.

(12 Wallace, 246.)

1. The army regulation No. 1002, which declares that "no officer or agent in the military service shall purchase from any other person in the military service or make any contract with any such person to furnish supplies or services, or make any purchase or contract in which such person shall be admitted to any share or part, or to any benefit to arise therefrom," does not apply to contracts on behalf of the United States, which require for their validity the approval of the Secretary of War. The secretary, though the head of the War Department, is not in the military service in the sense of the regulation, but is a civil officer.
- 2 In February, 1858, a contract was made on behalf of the United States with Sibley, an officer in the army of the United States, for the manufacture and use of what is known as the Sibley tent, of which tent Sibley had secured a patent, by which contract the government was authorized to make and procure as many of the tents as it might require by paying the sum of five dollars for each tent, the contract to continue until the 1st of January, 1859, and longer unless the United States were notified to the contrary. In April, 1858, Sibley executed to Burns, another officer in the army of the United States, an assignment of "the one-half interest in all the benefits and net profits arising from and belonging to the invention," from and after February 22d, 1856. Soon after the commencement of the rebellion Sibley resigned his commission in the army of the United States and joined the Confederates. Burns remained true in his allegiance to the government of the United States and served in the army of the Union. After the resignation and defection of Sibley one-half of the royalty on each tent made or procured by the government was paid to Burns, under the contract with Sibley.

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until December 26th, 1861, when further payments to him were forbidden by order of the Secretary of War, although the government continued to manufacture and use the tents as previously: *Held*, 1st, that the assignment of Sibley passed to Burns one-half interest in the contract of Sibley with the government, and the right to a moiety of the royalty stipulated; 2d, that the order of the Secretary of War, in December, 1861, did not terminate the contract; 3d, that the War Department, by its previous payments to Burns of one-half of the royalty stipulated, severed his claim from that of Sibley under the contract; 4th, that the act of March 3d, 1863, in barring Sibley, by reason of his disloyalty, of any action upon the contract with the government in the Court of Claims, does not affect the rights of Burns to his moiety under that contract or his right of action for the same in the Court of Claims. The act severs their claims.

3. The Court of Claims, in deciding upon the rights of claimants, is not bound by any special rules of pleading.

APPEAL from the Court of Claims, in which court the petitioner claimed against the United States the amount due on a contract authorizing them to make and use a certain tent known as the Sibley tent.

The facts found by the court below were thus:

1st. On the 22d of April, 1856, letters patent were issued to Major H. H. Sibley for an improved tent, since known as the Sibley tent.

2d. On the 6th of February, 1858, General Thomas, assistant quartermaster general at Philadelphia, in a letter addressed to W. E. Jones, "agent for the Sibley patent tent," stated that he had received information from the quartermaster general that the tent might be adopted into the service, provided a satisfactory arrangement could be made for the use of the patent, or for the tents, at a reasonable rate, and proposed that the department should pay him the sum of \$5 for each tent made for the use of the army, *as long as the agreement might be confirmed by the War Department*, and asking a reply to the proposition. To this letter Mr. Jones replied that he was willing to enter into a temporary arrangement of that nature, and to authorize the assistant quartermaster to make as many of the tents as the government might require, by paying him \$5 for each tent; the arrangement to hold good *until the 1st of January, 1859, and longer, unless notified to the contrary by him*.

On the 18th of February, 1858, the terms proposed in the letter of Mr. Jones were approved by the Secretary of War, and a contract was made accordingly, between the United States and Jones, as the agent of the Sibley tent patent, by which the United States were authorized to make and procure as many of the tents as the government might require by paying \$5 for each tent, and this arrangement was to hold good until the 1st of January, 1859, and longer, unless the United States were notified to the contrary. And the

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tent was adopted as one of the tents of the army by the army regulations.

On the 16th of April, 1858, Sibley assigned to Major W. W. Burns, another officer in the army of the United States, "the one-half interest in all of the benefits and net profits arising from and belonging to the invention of a certain improved conical tent, known as the Sibley tent, from and after the 22d of February, 1856, forever."

Soon after hostilities commenced between the United States and the Confederates, Major Sibley resigned his commission in the army of the United States and joined the Confederates. Major Burns remained true to his allegiance and served in the army of the Union.

On the 22d of August, 1861, General Meigs, quartermaster general, instructed General Thomas, assistant quartermaster general, at Philadelphia, under whose directions Sibley tents were made and contracted for for the United States, that the case of the claim of Major Burns to the royalty of the Sibley tent having been examined by the department, it was considered that he was entitled to one-half of the royalty as originally fixed between the government and Major Sibley, the inventor. It was accordingly directed that General Thomas should pay Major Burns \$2.50 on each such tent manufactured by the government, and that the other half of the original royalty, formerly paid to Sibley, would for the future be withheld, as well as all that might be due him; for that in consequence of the defection of that officer, it was considered that all his right and title thereto had reverted to the government.

Burns was accordingly, for some time afterwards, paid \$2.50 on each tent under the contract.

On the 26th of October, 1861, Major Meigs, quartermaster general, in a communication to the Secretary of War, submitted the question whether the contract in respect to the royalty allowed Burns was or was not in violation of paragraph 1002 of Revised Regulations for the Army. The paragraph is in these words:

"No officer or agent in the military service shall purchase from any other person in the military service, or make any contract with any such person to furnish supplies or services, or make any purchase or contract in which such persons shall be admitted to any share or part, or to any benefit to arise therefrom."

Upon this communication, the government at this time having made 38,158 tents, Mr. Cameron, the Secretary of War, on the 26th December, 1861, indorsed as follows:

Argument for the United States.

"No further payments will be made to Major W. W. Burns on account of royalty on the Sibley tent."

This order was communicated to officers of the War Department, though not communicated to the petitioner or the patentee, Major Sibley, but from its date no payments on account of the royalty were made. The last payment on account of the royalty was on the 3d of September, 1861. Notwithstanding the order, however, the government continued to make and use the tents. The petition of Burns asked for payment from the government of one-half the royalty, or \$2.50, for those tents which it had made and not paid him for.

On the 3d March, 1863, Congress passed an act amending the act establishing the Court of Claims, the twelfth section of which amendatory act provides:

"That in order to authorize the said court to render a judgment in favor of any claimant, if a citizen of the United States, it shall be set forth in the petition that the claimant . . . has at all times borne true allegiance to the government of the United States, and . . . has not in any way voluntarily aided, abetted, or given encouragement to rebellion against the said government, which allegation may be traversed by the government; and if on trial such issue shall be decided against the claimant his petition shall be dismissed." 12 Stat. at Large, 767.

The original act establishing the Court of Claims gives the court jurisdiction—

"To hear and determine all claims founded upon by law of Congress, or upon any regulation of an executive department, or upon any contract, express or implied, with the government of the United States, that may be suggested to it by a petition filed therein," &c. 10 Stat. at Large, 612.

The Court of Claims entered a judgment in favor of the petitioner for one-half of the royalty, or \$2.50 on each of 40,497 tents (the number which, as a fact, it found had been made,) amounting to the sum of \$101,242.50.

From this judgment the United States appealed.

Mr. B. H. Bristow, Solicitor General, and Mr. C. H. Hill, Assistant Attorney General, for the United States:

We do not ourselves make, as a point, the question submitted on the 26th of October, 1861, by Quartermaster Meigs to the Secretary of War; though of course the court is free to consider it as

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one which has occurred to others. The judgment, however, was perhaps erroneous on other grounds.

The contract gave the War Department a right to determine the contract. The department did determine it when Secretary Cameron indorsed on the note of Quartermaster Meigs that "no further payments will be made to Major W. W. Burns on account of royalty on the Sibley tent." Stoppage of payment was the most effective form of notice to Burns. It was, perhaps, previously (on the 1st January, 1859,) determined by the efflux of the time for which it was to run; Sibley not having notified to the government a contrary wish on his part. The *contract* being determined, if not on the 1st January, 1859, certainly on the 26th December, 1861, no suit lies in the Court of Claims. The government may have acted tortiously in making tents under the patent when it had no right by contract to do so. But for relief against such action, Congress is the body to address.

Sibley assigned to Burns no interest in the patent by the agreement of April 15th, 1858. The assignment was made after Sibley's contract with the United States. It could give Burns no right as against the United States; or anything but a right to call Sibley to account with him for moneys which Sibley might receive under the contract. Burns's right was thus but an equitable right, on which no suit lies in the Court of Claims. *Bonner v. United States*, 9 Wallace, 156.

By Sibley's becoming a rebel, perhaps his whole right under the patent became forfeit. If not, certainly by being a public enemy his partnership with Burns was dissolved, and his own right under the patent suspended. What rights then has Burns, who was no party to the contract, and who claims but under Sibley?

Messrs. Carpenter, Hughes, Denver, and Peck, contra.

Mr. Justice FIELD delivered the opinion of the court.

Upon the facts found by the Court of Claims, we are of opinion that the contract entered into on behalf of the United States with Major Sibley, by which the government was authorized to make and procure as many of the Sibley tents as it might require, by paying the sum of five dollars for each tent, was a valid contract, and not within the prohibitions of the army regulation, number 1002. That regulation does not apply to contracts on behalf of the United States, which require for their validity the approval of the Secretary of War. Though contracts of that character are usually negotiated by subordinate officers or agents of the government, they are in fact and in law the acts of the secretary, whose sanc-

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tion is essential to bind the United States. The secretary, though the head of the War Department, is not in the military service in the sense of the regulation, but, on the contrary, is a civil officer with civil duties to perform, as much so as the head of any other of the executive departments.

It would be carrying the regulation to an absurd extent to hold it was intended to preclude the War Department from availing itself, by purchase or any other contract, of any property which an officer in the military service might acquire, if its possession or use were deemed important to the government. If an officer in the military service, not specially employed to make experiments with a view to suggest improvements, devises a new and valuable improvement in arms, tents, or any other kind of war material, he is entitled to the benefit of it, and to letters patent for the improvement from the United States, equally with any other citizen not engaged in such service; and the government cannot, after the patent is issued, make use of the improvement any more than a private individual, without license of the inventor or making compensation to him.

In the present case there is no question of the right of Sibley to the improved conical tent. He received a patent for the improvement in April, 1856, and, by the contract with him, the United States recognized his right to it, and to compensation for its use.

The contract was nothing more, in fact, than a license from him to the government to manufacture or procure the tent, and use it, upon payment of a stipulated sum. By its terms the license extended until the 1st of January, 1859, and longer unless the United States were notified to the contrary. The power of determining this license thus remained with the patentee after that period; but the United States could also at any time have determined their liability by ceasing to make the tents. It does not appear that either party ever desired the termination of the license. Neither Sibley, nor Burns, who had become, as hereafter stated, equally interested with Sibley in the contract, ever expressed any intention to withdraw the license; and the United States continued to make and use the tents until the whole number were obtained, for which the present claim is asserted. The order of the secretary in December, 1861, declaring that no further payments should be made to Burns on account of the royalty on the tent, was not intended, in our judgment, either as a repudiation of the liability of the United States to him for the tents previously procured, amounting to over thirty-eight thousand, or of their liability to him for any tents that might be subsequently made, but only to leave

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the rights of Burns, connected as they were with a patent issued to one who had resigned his commission in the National army and entered the Confederate service, to be determined by the proper judicial tribunals. If the secretary had intended to terminate the contract, something more would have been required on his part, whilst the United States continued to manufacture and use the tents, than a mere direction to withhold the payments stipulated for such manufacture and use.

Burns, as we have said, had become equally interested with Sibley in the contract with the United States. In April, 1858, Sibley had executed to him an assignment of "the one-half interest in all the benefits and net profits arising from and belonging to the invention," from and after the 22d of February, 1856, a period anterior to the issue of the patent. Whether this assignment be held to have transferred a legal title to one half of the patent itself is not, in our judgment, important. It passed a half interest in the contract of Sibley with the government, and the right to a moiety of the royalty stipulated by that contract.

The War Department recognized this half interest of Burns, and, until the order of the secretary in December, 1861, paid a moiety of the royalty to him. It thus severed his claim under the contract from that of Sibley. But independent of this fact, the rights of Burns in the contract and the compensation stipulated could not be forfeited nor impaired by the disloyalty of his associate. He was true in his allegiance to the government, and served in the army of the Union. His claim could, therefore, be presented and considered in the Court of Claims by the act of March 3d, 1863. His associate, Sibley, is at the same time barred by that act of any action there, either joint or several, by reason of his disloyalty. The act does thus, in fact, sever their claims, allowing the claim of one to be prosecuted and barring that of the other. The technical rule of pleading in an action in a common-law court, by which a contract with two must be prosecuted in their joint names, if both are living, has no application to a case thus situated. And the Court of Claims, in deciding upon the rights of claimants, is not bound by any special rules of pleading.

We see no error in the ruling of that court, and therefore its judgment is

AFFIRMED.

Argument against the jurisdiction.

PHILIP ET AL. v. NOCK.

(13 Wallace, 185.)

The right given by the acts of February 18th, 1861, and July 20th, 1870, of appeal or writ of error without regard to the sum in controversy in questions arising under laws of the United States, granting or conferring to authors or inventors the exclusive right to their inventions or discoveries, applies to controversies between a patentee or author and alleged infringer as well as to those between rival patentees.

MOTION to dismiss an appeal from the Supreme Court of the District of Columbia.

The Judiciary Act of 1789, as is known, gives jurisdiction to this court in ordinary cases only "where the matter in dispute exceeds the sum or value of \$2,000."

The Patent Act of February 18th, 1861, (12 Stat. at Large, 130,) provides that—

"From all judgments and decrees of any Circuit Court, rendered in any action, suit, controversy, or case at law or in equity, *arising under any law of the United States granting or confirming to authors the exclusive right to their respective writings, or to inventors the exclusive right to their inventions or discoveries*, a writ of error or appeal, as the case may require, shall lie, at the instance of either party, to the Supreme Court of the United States, in the same manner and under the same circumstances as is now provided by law in other judgments and decrees of such Circuit Courts, *without regard to the sum or value in controversy in the action.*"

In this state of the statutory law, one Nock, inventor of locks, sued Philip & Solomon as infringers. He laid his damages at \$5,000 and got judgment for \$500. To this Philip & Solomon took a writ of error.

After this, that is to say, July 20th, 1870, Congress passed another act, (16 Stat. at Large, 207,) thus:

"A writ of error or appeal to the Supreme Court of the United States shall lie from all judgments and decrees of any Circuit Court, or of any District Court exercising the jurisdiction of a Circuit Court, or of the Supreme Court of the District of Columbia or of any Territory, in any action, suit, controversy, or case, at law or in equity, *touching patent rights*, in the same manner and under the same circumstances as in other judgments and decrees of such Circuit Courts, *without regard to the sum or value in controversy.*"

Mr. G. W. Paschal, in support of his motion to dismiss:

The language of the act of 1870 is broader than that of the act

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of 1861; but as the former act was not passed until after this writ was taken, of course the writ, if sustainable at all, must rest on the act of 1861.

Now a suit against a naked infringer of a patent is not within the letter, and certainly not within the spirit of that act. That act may well apply to the interference cases arising between rival patentees, or to controversies between such patentees, or those claiming under them—cases which properly involve the construction of the patent laws; where no amount can be said to be involved, but only the rights of inventors, to the benefit of their discoveries, as against the government or other inventors—with-out allowing a naked trespasser the benefit of appeal simply because he disputes the validity of a patent. The assumption really is that the validity of every patent may be attacked by any trespasser in a collateral way. Is this admissible?

Mr. R. D. Mussey, contra.

The CHIEF JUSTICE delivered the opinion of the court.

The Patent Law of February, 1861, gives to parties to suits arising under any law of the United States giving to inventors the exclusive right to their inventions or discoveries, a writ of error or appeal to the Supreme Court of the United States without regard to the sum in controversy. The act of 1870 does not alter the right of appeal or to a writ of error in this respect.

The motion to dismiss must, therefore, be

DENIED.

CANAL COMPANY v. CLARK.

(13 Wallace, 311.)

1. To entitle a name to equitable protection as a trade-mark, the right to its use must be exclusive, and not one which others may employ with as much truth as those whose use it. And this is so although the use by a second producer, in describing truthfully his product, of a name or a combination of words already in use by another, may have the effect of causing the public to mistake as to the origin or ownership of the product. Purchasers though mistaken, are not in such a case deceived by false representations, and equity will not enjoin against telling the truth.
2. Hence no one can apply the name of a district of country to a well-known article of commerce, and obtain thereby such an exclusive right to the application as to prevent others inhabiting the district or dealing in similar articles coming from the district, from truthfully using the same designation.
3. Accordingly, where the coal of one person who early and long mined coal in a valley of Pennsylvania known as the Lackawanna Valley had been designated

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and become known as "Lackawanna coal." Held, that miners who came in afterwards and mined in another part of the same valley, could not be enjoined against calling their coal "Lackawanna coal," it being in fact and in its generic character properly so designated, although more properly described when specifically spoken of as "Scranton coal" or "Pittston coal," and when specifically spoken of usually so called.

APPEAL from the Circuit Court for the Southern District of New York; the case, which arose on a bill to enjoin the use of an alleged trade-mark, being thus:

In the northeastern section of Pennsylvania there exists a place or region to which from early times the name of Lorckaworna, or Lackawanna, seems, on the few occasions when the place is mentioned, to have been given. As early as 1793, the diary of William Colbert, a pioneer preacher of the Methodists, makes record of his meeting a person who lived at "Lackawanna," and of his crossing a mountain and getting there himself. A deed, dated in 1774, speaks of a river running through that valley or region as "the Lackaworna," and another deed dated in 1796 conveyed "lands lying and being in Upper Settlement, so-called, and abutting on each side of the Lackawanna." The region, however, in those early times was uncultivated and little known to people generally in any way, and the name was unheard of and unnoted except by those who were dwelling in the very district.

The discovery and use of coal in Pennsylvania, soon after the year 1820, wrought an immense change in the whole northeastern part of the State. It brought this valley and others, as, for example, the Wyoming, Lehigh, and Schuylkill, into very prominent position and interest; and the "Lackawanna Valley" soon became a well-known and sufficiently defined region; one of large dimensions, extending along what had become known as the Lackawanna river to its junction with the Susquehanna.* In 1825 the Delaware and Hudson Canal Company purchased coal lands in this region, and in order to mine and bring the coal there to market, constructed at great expense a canal from Rondout on the Hudson, to Honesdale, in Pennsylvania, a distance of one hundred and eight miles, and a railroad thence to their coal mines, which they had since maintained, for the purpose of bringing their coal to market. This transport they began to make in 1828, and had ever since been engaged in taking out coal and in carrying it to the Hudson river and to the markets of the country; gradually increas-

*The name, Lackawanna, it is said, is a corruption of the Indian words Lahawanna; the two words signifying the meeting of two streams. See Hollister's History of the Lackawanna Valley, published by W. H. Tinson, New York, 1857, p. 10.

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ing their annual productions. In the first year they produced 720 tons, in the second year 43,000 tons, and in 1866 1,300,000 tons.

The coal coming from the Lackawanna valley, and it being impossible for ordinary persons by mere inspection to distinguish it from that mined elsewhere, it naturally got, or artificially had given to it, at the commencement of the company's business, the name "Lackawanna coal;" and by this name it had been generally afterwards known and called in the market.

Although this coal came from a section of country called both by geologists and the public the Lackawanna region, still the company were, without doubt, the first and for more than twenty years the only producers of coal from that region, and during all this time their coal had become favorably known in market by the name already mentioned.

In 1850, another company, the Pennsylvania Coal Company, began to mine coal from *their* mines situated in the same general region of country, and for the first two years the coal which they mined was partially prepared and brought to market by the Delaware and Hudson Canal Company, already named as the original operators, and sold under contract in common with their own; but, about 1852, when the Pennsylvania company began itself to bring its coal to market and to sell it, it got or had given to it the name of "Pittston coal," by which it was frequently or generally known and called, especially when specifically spoken of.

Afterwards, about 1856, a third company—the Delaware, Lackawanna, and Western Railroad Company—began to mine coal from mines which they owned, situated in other parts of the same section of country, and to distinguish it from that of other producers, their coal got or had given to it the name of "Scranton coal," by which it had since been frequently or generally known and called, especially when meant to be particularly referred to.

Coals from other parts of the same region got or had given to them distinctive names; such as Lehigh coal, Hazelton coal, Spring Mountain coal, Sugarloaf coal, &c., and in like manner coals from the Schuylkill region acquired or had given to them distinctive names by which the same were known more particularly in the market.

With all this, however, all the varieties coming, as in effect they did, from the same great veins or strata, were not unfrequently of later times spoken of by the trade, when speaking generally, as being Lackawanna coal; and under the general heading of statistics relating to coal would be spoken of in like generic terms.

The original Lackawanna was asserted by those interested in its

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sale to be better prepared than either of the others. From this circumstance or from some other it was esteemed and commanded, with a class of purchasers, a higher price than either the Scranton or Pittston.

The canal company had a market for their Lackawanna coal in the city and State of New York, and also in the cities and towns of the Eastern States, and, amongst others, at Providence, R. I., where they had for many years sold annually large quantities by the name of "Lackawanna coal," by which it had been favorably known.

In this state of things, one Clark, a dealer in coals, at Providence, advertised in the newspapers published in that city and otherwise, that he kept on hand, for sale cheap, large quantities of "Lackawanna coal," and in this way, *and by that name*, had sold many tons of the Pittston and Scranton coals annually. It was admitted that he did not have any of the canal company's coal—that is to say, the original Lackawanna—for sale.

Hereupon the Delaware and Hudson Canal Company filed their bill against Clark, to enjoin his calling the coal which he sold "Lackawanna coal." The bill averred that about the time the canal company commenced their operations, they sought out, devised, and adopted the name "Lackawanna coal" as a special, particular, and distinctive name or trade-mark, by which their coal might be introduced to dealers as the product of their mines in distinction from the coal of other producers, and that prior to their adoption of the word Lackawanna it had never been adopted or used in combination with the word "coal" as a name or trade-mark for any kind of coal. Their bill also averred that ever since their adoption of the name their coal has been called and known in the market as "Lackawanna coal," and by no other name.

The defendant, it was admitted, had none of the complainant's "Lackawanna coal" for sale, but dealt in coals from another part of the valley; sorts which when specifically distinguished, as they constantly were, were distinguished by the name of "Scranton coal," and "Pittston coal;" coals having the same general appearance as the complainant's "Lackawanna coal," and which the bill alleged could not be easily distinguished therefrom by inspection.

The answer denied that the name "Lackawanna coal" was, or ever had been, the peculiar property and trade-mark of the complainants, or of benefit to them as establishing the identity of the coal. It admitted that the defendant kept coal for sale, and that he did not purchase or keep for sale any of the company's Lacka-

Argument in support of the trade-mark.

wanna-coal, and that he dealt almost exclusively in coal mentioned in the bill as Scranton and Pittston coal, and that the two varieties were of the same general appearance as the coal of the complainants. It denied, however, that those varieties of coal were known by the names just mentioned, exclusively, or were of a less good quality than the coal of the complainants, and averred the contrary; affirming that they were equally Lackawanna coal, and known by that name, as the evidence tended to show that generally they were.

The court below dismissed the bill, and from that decree the Delaware and Hudson Canal Company appealed. The leading question presented by the appeal being whether the complainants had an exclusive right to the use of the words "Lackawanna coal," as a distinctive name or trade-mark for the coal mined by them, and transported over their railroad and canal to market; there being also some other points not necessary to be here stated.

The case was fully and remarkably well argued on both sides, and with a nice analysis of authorities.

Messrs. E. H. Owen and S. P. Nash, for the plaintiffs in error:

It cannot be doubted as a fact that the defendant advertises his coal as "Lackawanna coal," for the purpose of inducing the public to believe that it is in fact the coal produced and sold by the canal company, and with the intention of supplanting the company in the good will of its trade. This is a fraud upon the public, and a fraud also upon the company suing; depriving them of the benefit of any right they have in the word Lackawanna, as a *trade-mark*.

Now, the canal company has a valid title to the use of the word Lackawanna as a *trade-mark*. They were the first to adopt and impose upon it the office of becoming and being thereafter the name for their coal; so adopting and appropriating it as early as 1828, at the commencement of their business. The first coal which they brought to market was called and sold by the name of Lackawanna coal, and all the coal which they have hitherto brought to market has been sold and dealt in by that name and by none other. By such original appropriation of the word "Lackawanna," they acquired a title thereto, and the right to its exclusive use in combination with the word "coal," and thereupon and thereafter, by the continued use thereof, the new compound word "Lackawanna coal" became, and was, and is, the name and *trade-mark* for their coal, not limited by territorial bounds. *Derringer v. Plate*, 29 California, 292.

It is not necessary that a word which may be adopted as a name

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and trade-mark should be a new creation never before known or used, to entitle it to be so adopted. Any word in common use may be taken, if its application be original, and so far peculiar as to be capable, when known to the public, of distinguishing the property of the party so adopting it, and to which it may be attached, from that of other parties. In such case the right of the public to use the word is not abridged. It can be used as originally and in any and every other way imaginable, except in its peculiar combination with the word "coal."

The exceptions to the right to appropriate a *word* for a trade-mark are, that it cannot be done when the word adopted is merely used as descriptive of *quality*, as in the case of *Stokes v. Landgraff*, 17 Barbour, 608; or of *Corwin v. Daly*, 7 Bosworth, 222; or of *Amoskeag Manufacturing Company v. Spear*, 2 Sandford's Supreme Court, 599; or where it is the proper name for the article, as in the case of the "Schnapps," the subject of controversy in *Wolfe v. Goulard*, 18 Howard's Practice, 64; or where it has by general use become the appropriate name of an article, which all persons manufacturing the same may use, as in the case of "Dr. Johnson's Yellow Ointment," *Singleton v. Bolton*, 3 Douglas, 293; or that of "The Essence of Anchovies," *Burgess v. Burgess*, 17 English Law and Equity, 257.

The word Lackawanna, as used by the company, does not come within these exceptions. It is not the naturally appropriate name for coal. In its original sense it did not mean coal, nor had it become by previous use the name of coal, nor does it imply, nor was it intended to indicate the quality of coal, but it was adopted for and became, and was, and still is, the specific name thereof, indicating its origin and ownership, and by which it could be bought and sold in market.

The defendant does not pretend that he originated the name, or that any other company or person adopted or used it as a specific name for coal prior to the time when the canal company adopted it. Nor has he any color of right to sell his coal by the name of "Lackawanna coal," from the mere fact that it comes from what is commonly known as the Lackawanna region; more especially since it does not come from the company's mines, nor through them as producers, and is not, in fact, the coal known in market as Lackawanna coal. That the different varieties, Pittston, Scranton, and Lackawanna, may be occasionally grouped together in loose parlance, or in the ultimate head of a statistical exhibit, under the general name of Lackawanna coal, proves nothing. Different varieties of Lehigh and Schuylkill coal are grouped under those two

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general names. So different varieties of German wines are, and called Rhine wines, but this would give no right to any one to use the peculiar and specific name of one kind of coal or wine as and for the name of another produced by a different person.

Various authorities support our view. To three as particularly doing so we refer the court.

The first is *Newman v. Alvord*, 49 Barbour, 588. There the plaintiffs manufactured water-lime from beds near Akron, Erie county, New York, which they called "Akron cement, Akron water-lime," and the defendant manufactured a similar article from his beds near Syracuse, Onondaga county, and called his "Onondaga Akron cement and water-lime," and it was held that the word Akron, as used by the plaintiffs, was their trade-mark, and that they were entitled to be protected by injunction in its use.

The next case is *McAndrcws v. Bassett*, 10 Jurist, new series, 550. There it appeared that the plaintiff had first adopted and used the word "Anatolia," as a name for his liquorice, and the defendant insisted upon his right to use that word also as the name of his liquorice, because it was the name of a country, the use of which, as he alleged, was common to all, and therefore the plaintiff had no exclusive right to its use; but the court pronounced the argument a "fallacy," and stated that although property in a word cannot exist for *all* purposes, yet it will exist when applied by way of stamp upon a stick of liquorice, the moment the article thus stamped goes into market. In the case at bar, although the coal cannot be stamped, yet the moment it is produced in market the name Lackawanna becomes united to it as fully as if it had been stamped thereon. There is no difference in principle between the two cases.

The third case is *Seixo v. Provezende*, Law Reports, 1 Chancery Appeals, 192, where it appeared that the plaintiff, Baron de Seixo, was the proprietor of an estate called the Quinta de Seixo, which was celebrated for the port wine produced from it, and which he consigned to London for sale, placing upon the heads of the casks various marks, and at the bung a crown with the word, "Seixo," and so his wine became known as "Crown Seixo." The defendant being the lessee of an adjoining estate known, also, as the Quinta de Seixo, sent his wine to London with certain marks on the head of the casks, and at the bung thereof a crown and the words, "Seixo de Cima," (Upper Seixo,) and he claimed the right so to use the name Seixo, on the ground that he was owner or lessee of a vineyard adjoining the plaintiff's, also of several small vineyards on the opposite side of the river, parts of which were known by the

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name of "Seixo," meaning *stony* or *pebbly*. The court held, that even conceding that, it did not justify the defendant in adopting a device or brand, the probable effect of which was to lead the public to suppose when purchasing his wine, that they were purchasing the wine produced from the plaintiff's vineyard.

Our whole case is summed up in Lord Langdale's language in *Croft v. Day*, 7 Beavan, 84. His lordship there says:

"No man has a right to sell his own goods as the goods of another. You may express the same principle in different form, and say that no man has a right to dress himself in colors, or adopt and bear symbols to which he has no peculiar or exclusive right, and thereby personate another person for the purpose of inducing the public to suppose either that he is that other person, or that he is connected with, or selling the manufacture of such other person, while he is really selling his own. It is perfectly manifest that to do these things is to commit a fraud, and a very gross fraud."

But to establish the defendant's fraud and deceit, it is not even necessary to show that he sells his coal *as and for* that of the appellants. It is sufficient that he intentionally sells it by the *name* which he knows the appellants had previously adopted as the name of their coal.

Mr. H. E. Knox, contra, with a brief of Messrs. Fullerton, Knox, and Rudd, relied on the following general propositions of law established by principle or by authorities, which he cited.

1. That to constitute a trade-mark in the name, the name must be either (1) an *invented* one, or (2) one which identifies the maker with the article by indicating the *person* by whom made, or the *place* at which made, in other words, the name must be either a *merely fancy name* or a name indicating *ownership* or *origin*.

2. That a person has no right to appropriate a name which others may apply with equal truth, and have an equal right to employ for the same purpose, such as a geographical name, as in this case.

3. That the basis of the action of a court of equity to restrain the infringement of the right to a trade-mark is *fraud* or *imposition* on the part of the defendant, fraud as against the plaintiff, or imposition on the public.

4. That the name must be used *distinctively* and *exclusively* in order to give a title to it.

Mr. Justice STRONG delivered the opinion of the court.

The first and leading question presented by this case is whether

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the complainants have an exclusive right to the use of the words "Lackawanna coal," as a distinctive name or trade-mark for the coal mined by them and transported over their railroad and canal to market.

The averments of the bill (quoted *supra*, p. 355) are supported by no inconsiderable evidence. The complainants were undoubtedly, if not the first, among the first producers of coal from the Lackawanna valley, and the coal sent to market by them has been generally known and designated as Lackawanna coal. Whether the name "Lackawanna coal" was devised or adopted by them as a trade-mark before it came into common use is not so clearly established. On the contrary the evidence shows that long before the complainants commenced their operations, and long before they had any existence as a corporation, the region of country in which their mines were situated was called "The Lackawanna Valley;" that it is a region of large dimensions, extending along the Lackawanna river to its junction with the Susquehanna, embracing within its limits great bodies of coal lands, upon a portion of which are the mines of the complainants, and upon other portions of which are the mines of the Pennsylvania Coal Company, those of the Delaware, Lackawanna, and Western Railroad Company, and those of other smaller operators. The word "Lackawanna," then, was not devised by the complainants. They found it a settled and known appellation of the district in which their coal deposits and those of others were situated. At the time when they began to use it, it was a recognized description of the region, and of course of the earths and minerals in the region.

The bill alleges, however, not only that the complainants devised, adopted, and appropriated the word, as a name or trade-mark for their coal, but that it had never before been used, or applied in combination with the word "coal," as a name or trade-mark for any kind of coal, and it is the combination of the word Lackawanna with the word coal that constitutes the trade-mark to the exclusive use of which they assert a right.

It may be observed there is no averment that the other coal of the Lackawanna valley differs at all in character or quality from that mined on the complainants' lands. On the contrary, the bill alleges that it cannot easily be distinguished therefrom by inspection. The bill is therefore an attempt to secure to the complainants the exclusive use of the name "Lackawanna coal," as applied, not to any manufacture of theirs, but to that portion of the coal of the Lackawanna valley which they mine and send to market, differing neither in nature or quality from all other coal of the same region.

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Undoubtedly words or devices may be adopted as trade-marks which are not original inventions of him who adopts them, and courts of equity will protect him against any fraudulent appropriation or imitation of them by others. Property in a trade-mark, or rather in the use of a trade-mark or name, has very little analogy to that which exists in copyrights, or in patents for inventions. Words in common use, with some exceptions, may be adopted, if, at the time of their adoption, they were not employed to designate the same, or like articles of production. The office of a trade-mark is to point out distinctively the origin, or ownership of the article to which it is affixed ; or, in other words, to give notice who was the producer. This may, in many cases, be done by a name, a mark, or a device well known, but not previously applied to the same article.

But though it is not necessary that the word adopted as a trade-name should be a new creation, never before known or used, there are some limits to the right of selection. This will be manifest when it is considered that in all cases where rights to the exclusive use of a trade-mark are invaded, it is invariably held that the essence of the wrong consists in the sale of the goods of one manufacturer or vendor as those of another ; and that it is only when this false representation is directly or indirectly made that the party who appeals to a court of equity can have relief. This is the doctrine of all the authorities. *Amoskeag Manufacturing Co. v. Spear*, 2 Sandford's Supreme Court, 599 ; *Boardman v. Meriden Britannia Company*, 35 Connecticut, 402 ; *Farina v. Silverlock*, 39 English Law and Equity, 514. Hence the trade-mark must either by itself, or by association, point distinctively to the origin or ownership of the article to which it is applied. The reason of this is that unless it does, neither can he who first adopted it be injured by any appropriation or imitation of it by others, nor can the public be deceived. The first appropriator of a name or device pointing to his ownership, or which, by being associated with articles of trade, has acquired an understood reference to the originator, or manufacturer of the articles, is injured whenever another adopts the same name or device for similar articles, because such adoption is in effect representing falsely that the productions of the latter are those of the former. Thus the custom and advantages to which the enterprise and skill of the first appropriator had given him a just right are abstracted for another's use, and this is done by deceiving the public, by inducing the public to purchase the goods and manufactures of one person supposing them to be those of another. The trade-mark must therefore be distinctive in its orig-

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inal signification, pointing to the origin of the article, or it must have become such by association. And there are two rules which are not to be overlooked. No one can claim protection for the exclusive use of a trade-mark or trade-name which would practically give him a monopoly in the sale of any goods other than those produced or made by himself. If he could, the public would be injured rather than protected, for competition would be destroyed. Nor can a generic name, or a name merely descriptive of an article of trade, of its qualities, ingredients, or characteristics, be employed as a trade-mark and the exclusive use of it be entitled to legal protection. As we said in the well-considered case of *The Amoskeag Manufacturing Company v. Spear*, 2 Sandford's Supreme Court, 599, (quoted *supra*, in the preceding page,) "the owner of an original trade-mark has an undoubted right to be protected in the exclusive use of all the marks, forms, or symbols, that were appropriated as designating the true origin or ownership of the article or fabric to which they are affixed; but he has no right to the exclusive use of any words, letters, figures, or symbols, which have no relation to the origin or ownership of the goods, but are only meant to indicate their names or quality. He has no right to appropriate a sign or a symbol, which, from the nature of the fact it is used to signify, others may employ with equal truth, and therefore have an equal right to employ for the same purpose. *Vide Wolfe v. Goulard*, 18 Howard's Practice Reports, 64; *Fetridge v. Wells*, 4 Abbott's Practice Reports, 144; *Town v. Stetson*, 5 Id., N. S., 218; *Phalon v. Wright*, 5 Phillips, 464; *Singleton v. Bolton*, 3 Douglas, 293; *Perry v. Truefitt*, 6 Beavan, 66; *Canham v. Jones*, 2 Vesey & Beames, 218; *Millington v. Fox*, 3 Milne & Craig, 338.

And it is obvious that the same reasons which forbid the exclusive appropriation of generic names or of those merely descriptive of the article manufactured and which can be employed with truth by other manufacturers, apply with equal force to the appropriation of geographical names, designating districts of country. Their nature is such that they cannot point to the origin (personal origin) or ownership of the articles of trade to which they may be applied. They point only at the place of production, not to the producer, and could they be appropriated exclusively, the appropriation would result in mischievous monopolies. Could such phrases, as "Pennsylvania wheat," "Kentucky hemp," "Virginia tobacco," or "Sea Island cotton," be protected as trade-marks; could any one prevent all others from using them, or from selling articles produced in the districts they describe under those appellations, it would greatly embarrass trade, and secure exclusive rights to individuals in that

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which is the common right of many. It can be permitted only when the reasons that lie at the foundation of the protection given to trade-marks are entirely overlooked. It cannot be said that there is any attempt to deceive the public when one sells as Kentucky hemp or as Lehigh coal, that which in truth is such, or that there is any attempt to appropriate the enterprise or business reputation of another who may have previously sold his goods with the same description. It is not selling one man's goods as and for those of another. Nothing is more common than that a manufacturer sends his products to market, designating them by the name of the place where they were made. But we think no case can be found in which other producers of similar products in the same place, have been restrained from the use of the same name in describing their goods. It is true that in the case of *Brooklyn White Lead Company v. Masury*, 25 Barbour, 416, where it appeared that the defendant (at first selling his product under the name "Brooklyn white lead") had added to the name the word "Company" or "Co," which made it an imitation of the plaintiff's trade-mark, though he was not a company, he was enjoined against the use of the added word. It was a case of fraud. He had assumed a false name in imitation of a prior true one, and with the obvious design of leading the public to think his manufacture was that of the plaintiff. But the court said, as both the plaintiff and defendant dealt in the same article, and both manufactured it at Brooklyn, each had the same right to describe it as Brooklyn white lead.

We have been referred by the plaintiffs to three decisions which are supposed to justify the adoption of the name simply of a district or town, as a trade-mark.

One of these is *Alvord v. Newman*. There it appeared that the complainants had been manufacturers of cement or water-lime at Akron, from beds in the neighborhood of that place, for about thirteen years, and that they had always designated and sold their products as "Akron cement," and "Akron water-lime." The defendants commenced a similar business twelve years later, and manufactured cement from quarries situated near Syracuse, in Onondaga county, and called their product "Onondaga Akron cement, or water-lime." It was not in fact Akron cement (for Akron and Syracuse were a long distance from each other,) and the purpose of calling it such was evidently to induce the public to believe that it was the article made by the plaintiffs. The act of the defendants was therefore an attempted fraud, and they were restrained from applying the word Akron to their manufacture. But the case does not rule that any other manufacturer at Akron might not have called

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his product "Akron cement," or "Akron water-lime." On the contrary, it substantially concedes that the plaintiffs by their prior appropriation of the name of the town in connection with the words cement and lime acquired no exclusive right to its use, as against any one who could use it with truth.

McAndrews v. Bassett is another case cited by the complainants. The plaintiffs in that case were manufacturers of liquorice made from roots and juice imported from Anatolia and Spain, and they sent their goods to market stamped "Anatolia." Soon afterwards the defendants made to order from a sample of the plaintiff's liquorice, other liquorice which they also stamped "Anatolia." It was a clear case of an attempt to imitate the mark previously existing, and to put upon the market the new manufacture as that of the first manufacturers. It does not appear, from the report of the case, that the juice or roots from which the defendants' article was made came from Anatolia. If not their mark was false. Of course the Lord Chancellor enjoined them. In answer to the argument that the word Anatolia was in fact the geographical designation of a whole country, a word common to all, and that therefore there could be no property in it, he said, "Property in the word for all purposes cannot exist; but property in that word as applied by way of stamp upon a stick of liquorice does exist the moment a stick of liquorice goes into the market so stamped and obtains acceptance and reputation in the market." It was not merely the use of the word, but its application by way of stamp upon each stick of liquorice that was protected. Nothing in this case determines that a right to use the name of a region of country as a trade-mark for an article may be acquired, to the exclusion of others who produce or sell a similar article coming from the same region.

Nor is such a doctrine to be found in *Seixo v. Proverende*; the remaining case cited by the complainants. The case turned upon an imitation of the plaintiff's device, which was the figure of a coronet combined with the word Seixo, a word which can hardly be said to have been the name of a district of country. It means stony, and though applied to two estates, it was also the name of the plaintiff. Yet nothing in the decision warrants the inference that the word Seixo could alone become a trade-mark for any article, much less than it could be protected as a trade-mark for any article to the exclusion of its use in describing other articles coming from the same estate.

It must then be considered as sound doctrine that no one can apply the name of a district of country to a well-known article of commerce, and obtain thereby such an exclusive right to the ap-

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plication as to prevent others inhabiting the district or dealing in similar articles coming from the district, from truthfully using the same designation. It is only when the adoption or imitation of what is claimed to be a trade-mark amounts to a false representation, express or implied; designed or incidental, that there is any title to relief against it. True it may be that the use by a second producer, in describing truthfully his product, of a name or a combination of words already in use by another, may have the effect of causing the public to mistake as to the origin or ownership of the product, but if it is just as true in its application to his goods as it is to those of another who first applied it, and who therefore claims an exclusive right to use it, there is no legal or moral wrong done. Purchasers may be mistaken, but they are not deceived by false representations, and equity will not enjoin against telling the truth.

These principles, founded alike on reason and authority, are decisive of the present case, and they relieve us from the consideration of much that was pressed upon us in the argument. The defendant has advertised for sale and he is selling coal not obtained from the plaintiffs, not mined or brought to market by them, but coal which he purchased from the Pennsylvania Coal Company, or from the Delaware, Lackawanna, and Western Railroad Company. He has advertised and sold it as Lackawanna coal. It is in fact coal from the Lackawanna region. It is of the same quality and of the same general appearance as that mined by the complainants. It is taken from the same veins or strata. It is truly described by the term Lackawanna coal, as is the coal of plaintiffs. The description does not point to its origin or ownership, nor indicate in the slightest degree the person, natural or artificial, who mined the coal or brought it to market. All the coal taken from that region is known and has been known for years by the trade, and rated in public statistics as Lackawanna coal. True the Delaware, Lackawanna, and Western Railroad Company have sometimes called their coal Scranton coal, and sometimes Scranton coal from the Lackawanna, and the Pennsylvania Coal Company have called theirs Pittston coal, thus referring to the parts of the region in which they mine. But the generic name, the comprehensive name for it all is Lackawanna coal. In all the coal regions there are numerous collieries, owned and operated by different proprietors, yet the product is truly and rightfully described as Schuylkill, Lehigh, or Lackawanna coal, according to the region from which it comes. We are therefore of opinion that the defendant has invaded no right to which the plaintiffs can maintain a claim. By advertising and selling coal brought from the Lackawanna valley

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as Lackawanna coal, he has made no false representation, and we see no evidence that he has attempted to sell his coal as and for the coal of the plaintiffs. If the public are led into mistake, it is by the truth, not by any false pretense. If the complainants' sales are diminished, it is because they are not the only producers of Lackawanna coal, and not because of any fraud of the defendant. The decree of the Circuit Court dismissing the bill must, therefore,

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AFFIRMED.

TUCKER v. SPALDING.

(13 Wallace, 453.)

1. In an action at law, where a patent of prior date is offered in evidence as covering the invention described in the plaintiff's patent, on a charge of infringement, the question of the identity of the two instruments or machines must be left to the jury, if there is so much resemblance as raises the question at all.
2. It is no ground for rejecting the prior patent that it does not profess to do the same things that the second patent does.
3. If what it performs is essentially the same, and its structure and action suggest to the mind of an ordinarily skillful mechanic its adaptation to the same use as the second patent, by the same means, this adaptation is not a new invention, and is not patentable.

ERROR to the Circuit Court for the District of California.

Spalding brought an action at law against Tucker, to recover damages for the infringement of a patent for the use of movable teeth in saws and saw-plates.

The plaintiff's patent claimed the forming of recesses or sockets in saws or saw-plates for detachable or removable teeth on circular lines, and in combination with these recesses, teeth having their base or bottom parts formed on circular lines as described.

The defendant offered in evidence, as covering the subject-matter of the plaintiff's patent, a patent to Jonah Newton, confessedly prior in date and invention to that of plaintiff. This patent of Newton's had cutters of the same general shape and form, including circular base, as the saw-teeth of the other patent, attachable to a circular disk, and removable as in the other, but attached by screws or nuts, and the *claim or purpose of the Newton patent was for cutting tongues and grooves, mortices, &c.* In connection with the offer of the patent to Newton, the defendant offered to prove by experts that the process of Newton's patent, and of the machine made thereunder, and of the result produced thereby, were the same process, machine, and result as were involved in the patent of the plaintiff; that saws were made under Newton's patent, and

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were in practical operation (the exhibition of the saws so made and operated being also offered;) that the machine made under Newton's patent rotated in precisely the same manner and with the same effect as a circular saw, and that what in Newton's patent were designated "cutters," performed the same functions as the detachable teeth, described in the plaintiff's patent, and accomplished the same result; and that the said "cutters" were nothing in reality but detachable saw-teeth, inserted on circular lines, and rounded at the base and inserted in circular sockets, and secured an equal distribution of the pressure on the said "cutters," over and upon the circular sockets in which they were set, and thus prevented fracture of the disk or plate.

The court refused to admit the patent to Newton in evidence. Verdict and judgment were rendered accordingly for the plaintiff, Spalding, and the other party brought the case here on error, assigning several errors in the rejection of evidence and in the charge of the court. The cardinal point of the case, however, was the refusal of the court to permit the Newton patent to be read to the jury; the bills of exception including, however, the rejection of the testimony of experts, to prove the identity of the invention described in the Newton patent with that of the plaintiff.

Mr. W. C. Witter, for the plaintiff in error, (a brief of Mr. George Gifford being filed,) argued that the evidence rejected ought to have been submitted to the jury; and went also into a full exhibition of diagrams and models to show that the two inventions were in truth the same.

Messrs. M. A. Wheaton and J. J. Coombs, contra.

Mr. Justice MILLER delivered the opinion of the court.

We are of opinion that the court erred in refusing to admit the patent to Newton, confessedly prior in date and invention to that of the plaintiff, which the defendant offered as covering the subject-matter of the plaintiff's patent.

Whatever may be our personal opinions of the fitness of the jury as a tribunal to determine the diversity or identity in principle of two mechanical instruments, it cannot be questioned that when the plaintiff, in the exercise of the option which the law gives him, brings his suit in the law in preference to the equity side of the court, that question must be submitted to the jury, if there is so much resemblance as raises the question at all. And though the principles by which the question must be decided may be very largely propositions of law, it still remains the essential

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nature of the jury trial that while the court may on this mixed question of law and fact, lay down to the jury the law which should govern them, so as to guide them to truth, and guard them against error, and may, if they disregard instructions, set aside their verdict, the ultimate response to the question must come from the jury.

The court in rejecting the patent of Newton seems to have been mainly governed by the use which was claimed for it, and also that no mention is made of its adaptability as a saw. But if what it actually did is in its nature the same as sawing, and its structure and action suggested to the mind of an ordinarily skillful mechanic this double use to which it could be adapted without material change, then such adaptation to the new use, is *not* a new invention, and is not patentable.

The defendant offered to prove that such was the relation of the principle of the Newton patent and plaintiff's patent by experts, and we are clear that the resemblance was close enough to require the submission of the question of identity to the jury, and the admission of the testimony of experts on that subject.

This subject was fully considered in the case of *Bischoff v. Wethered*, 9 Wallace, 815, decided since the present writ of error was issued.

This court has no more right than the court below to decide that the one patent covered the invention of the other, or that it did not; and it is obvious that extended argument here, to prove such general resemblance as would require the submission of both patents to the jury, might prejudice the plaintiff's case on the new trial which must be granted. We therefore forbear to discuss the matter further; for the same reason we refrain from comment on the instruction. It is to be understood that in declining to pass upon the other alleged errors of the record, this court neither affirms or overrules the action of the court on those points, and the case is reversed for this fundamental error, which includes several others resting on that.

JUDGMENT REVERSED AND A NEW TRIAL ORDERED.

BUTLER v. WATKINS.

(13 Wallace, 456.)

1. On a suit for damages by a patentee against a British corporation and its "managing agent," sent to this country, in having been fraudulently pretending in a series of negotiations to conclude an agreement with him, the patentee, to make use of

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his patent—the alleged real purpose having been through drafts of agreements and protracted consultations to keep the patentee from using his invention during a certain season, and so to get time to use another invention in which they were themselves largely interested—it is error to charge that if the corporation never gave any authority to the managing agent to assent to the draft of agreement in their behalf and in their name, and never sanctioned it as a corporate act, suit for such a fraud as above indicated could not be maintained. The suit not being on any contract, the corporation might be, notwithstanding, responsible for the fraud.

2. In actions for fraud, large latitude is given to the admission of evidence. If a motive exist prompting to a particular line of conduct, and it be shown that in pursuing that line a defendant has deceived and defrauded one person, it may be inferred that similar conduct towards another, at about the same time and in relation to a like subject, was actuated by the same spirit. On such a suit as above mentioned evidence was therefore held admissible that in the same spring or early summer the defendant had similar negotiations with a wholly different person respecting a patented invention of his, like the plaintiff's, and acted deceitfully towards him in order to keep his invention out of the market in that year.

ERROR to the Circuit Court of the United States for the District of Louisiana ; the case being thus :

Butler, of New Orleans, had procured one or more patents for an invention called the " Butler cotton-tie," a machine for fastening bales of cotton. There was at the same time a large manufacturing company near Birmingham, England, called "The Patent Nut and Bolt Company," of which one Watkins was the managing agent. Watkins being in this country, and at New Orleans, had some negotiation with Butler looking to an arrangement by which the company should largely assume the manufacture of cotton-ties under Butler's patent, giving to him a share of the proceeds of sale. The negotiations, though begun and carried on a certain way, were not concluded. Hereupon Butler sued the company and Watkins for damages.

The plaintiff's petition alleged that in February, 1868, in New Orleans, Watkins, in behalf of himself and the Nut and Bolt Company, had an understanding with him in relation to the manufacture and sale of his cotton-tie, for the year 1868; that Watkins, for himself and the company, promised that shortly after his return to England, (which was to take place a few weeks after the date already stated,) certain formalities would be gone through, and the manufacture of the said ties commenced and completed in ample time for the business and demand of the year 1868; that for a long time after the return of Watkins to England, (which occurred in or about the latter part of March, 1868,) Watkins and the company caused him, Butler, to believe that the arrangement would be carried out, and did not undeceive him until late in the summer of 1868, when it was impossible for him to make any other arrangement for the manufacture and sale of the cotton tie.

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The plaintiff then averred that these doings of Watkins and the company were deceitful and in bad faith from beginning to end; that they were done for the purpose of imposing upon him and inducing him to give to Watkins and the company the control of the Butler cotton-tie for the year 1868, with the hope thereby of keeping it out of the market, and by that means render more certain the sale of the Beard and other ties, in which Watkins and the company were greatly interested. Further, that the artful and deceitful acts of Watkins and the company were so perfectly carried out, and the plaintiff so completely deceived, that his cotton-tie was kept from sale during the year 1868, and a large quantity of the Beard and other ties were sold and disposed of for the benefit of Watkins and the company; that had he, Butler, not been deceived and imposed upon by Watkins and the company he would have kept the management of his tie out of their hands, and under his own control, and would thereby have made from its sale during the year 1868 at the least \$35,000.

The defendants denied the validity of Butler's patent, and asserted, moreover, that they had never come under any obligation to him in regard to it.

On the trial it appeared that Butler had made a form of an agreement, such apparently as he considered had been fixed on between him and Watkins, and gave it to Watkins. The draft was dated February 1, 1868; but was not signed by any one, nor stamped. On the 3d of February, Watkins, being still in New Orleans, wrote a note to Butler, in which he said he had read the draft and found it "to be about the thing," and that he will have the same put in shape on his arrival home and send him, Butler, one to retain, the others to be returned. Matters remained in that state till April 17th, 1868, when Watkins thus writes, from the company's works near Birmingham:

"I have laid your proposition before my co-directors and they have given same their favorable consideration; but you will understand that we Englishmen are very particular as to what we do—more so than Americans. We are not quite so fast in promising, but are generally faithful to our promises. There are a few facts in relation to cotton ties and cotton-tie business to be considered before the agreement is completed. In the meantime we have commenced the manufacture of your tie and will send the first shipment (which will be small) to Mobile or New Orleans for Memphis, as tonnage may offer. The ties which we send out will be forwarded without prejudice, whether the agreement is finally sealed

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by my company or otherwise, and will be disposed of on the same terms as named in your agreement proposal."

This evidence being before the jury, the plaintiff offered in evidence certain letters written by the defendants to one Charles Wailey (who, it was said, had also invented a cotton-tie,) in the spring and summer of 1868, wherein the defendants led the said Wailey to believe that a contract between himself and Watkins, managing director of the company, had been recognized by them and would be by them carried out; and in connection therewith, the testimony of Wailey, for the purpose of proving that letters similar in many respects to letters written to Butler, and offered in evidence, were false and deceitful acts on the part of the defendants, done in order to keep Wailey's tie out of the market during the year 1868. The letters were offered in connection with the testimony of Wailey for the purpose of showing the fraudulent and deceitful conduct of the defendants in keeping Wailey's tie out of the market in the year 1868, in order to advance their own interests by a sale of the Beard tie, with the object of showing to the jury the systematic manner and course of the defendants in fraudulently preventing the sale of other cotton ties, and thereby to establish the fraud and deceit of defendants in relation to plaintiff's tie, as charged and set forth in the petition, and generally to prove the deceitful and fraudulent conduct and bad faith of defendants in keeping the tie of plaintiff from sale during the entire year of 1868.

The defendants objected to the evidence on the ground that their letters to Wailey and his testimony in relation to them could not be proved for the purpose of thereby establishing fraud and deceit on the part of the defendants towards plaintiff, and that if such fraud and deceit existed it would have to be established by proof of the acts and conduct of defendants towards Butler, not towards Wailey.

Of this view was the court, and it accordingly refused to permit the letters to be read in evidence, or the testimony of Wailey in relation to them to be heard.

The plaintiff excepted.

The court—under requests from the defendants; the plaintiffs asking no instructions—charged among other things:

That to bind the plaintiff by the terms of the proposed agreement his signature to it was necessary, and that so long as it was unsigned it was only a proposition which he might at any time withdraw.

That if Watkins declined to sign the draft, and informed the

Argument for the defendant in error.

plaintiff that it must go before the board of directors of the company and be examined by the board, and put in form, with the corporate seal attached thereto to render it valid, it was a notice to the plaintiff that the agreement was not completed, and that it was not obligatory upon either party until it was completed in that manner, or some other sufficient to bind the company.

That if the corporation never gave any authority to Watkins to assent to the proposal or draft agreement in their behalf, and in their name, and never sanctioned the same as a corporate act, the suit cannot be maintained against them.

Verdict and judgment having gone for the defendant, the plaintiff brought the case here.

Mr. W. F. Peckham, for the plaintiff in error:

The court erred in the first and second of the above quoted paragraphs of its charge; for whether the agreement was binding or not, was immaterial. The action was not on the agreement, but for the fraud in inducing plaintiff to enter into negotiations which defendants intended as a sham. The charge had a tendency to distract the jury's attention from the real issue.

So it erred in the portion of the charge above italicized; for here the gist of the action is ignored. The very wrong complained of is, that defendants never did intend to enter into the contract, and of course never authorized any one to bind them by it, but that they did enter into a conspiracy to make the plaintiff believe that they did intend to made the contract, while, in fact, never so intending at all.

And, previously to all this, it had erred on the trial, in excluding the letters to Wailey and his testimony. For in criminal law evidence of other doings under similar circumstances at about the same time is admissible, not as proving the other crimes, but as tending to prove the *intent* or the *animus* with which the act under investigation was done.

Messrs. P. Phillips and J. A. and S. D. Campbell, contra:

The claim for damages rests on an "understanding" evidenced by a certain draft and letters. Now to sustain an action on any agreement it must be complete. No obligation is imposed by a mere affirmation or offer to enter into an agreement. Here, on one side, patent rights were to be conveyed, which as all know pass under the statutes by written assignments, on the other hand a large undertaking for manufacturing by a foreign corporation, and the negotiation is with an agent in this country. The subject-

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matter then, the corporate character of one of the parties, and its location in a foreign county, without more, leads to the strongest presumption that the "understanding" was not to be perfected until some written instrument was signed and delivered. But we are not left to *presumption*. The letters of Watkins to Butler place this question beyond doubt. It is evident that Watkins either had not the power to bind the corporation or was unwilling to exercise it.

The whole evidence offered by the plaintiff to show the "understanding" is in paper, and the question whether it amounted to a valid and binding obligation might properly have been determined by the court. But here the plaintiff had the full benefit of the jury as to any inferences which could be drawn from any circumstances.

Even if the rejection of the evidence about Wailey's letters was erroneous, still, if the plaintiff could not have recovered if they had been admitted, the error constitutes no ground for reversal.

Mr. Justice STRONG delivered the opinion of the court.

We are unable to discover error in the instructions given to the jury by the court below, or in the answers made to the prayers of the defendants, except in a single particular. What the court said may have been inadequate to a full presentation of the case, but the plaintiff asked for no instructions, and he cannot therefore now be heard to complain that full instructions were not given. The bills of exceptions bring upon the record only that which was said to the jury, and to that alone can error be assigned.

It is quite true that the suit was not brought upon any contract. The theory of the plaintiff was that no agreement had ever been made, and that the defendants had never intended making one, though all the while during the negotiation, deceptively and fraudulently holding out to the plaintiff a profession of intention to conclude an agreement, and that this was done with the purpose of keeping the plaintiff's "cotton-tie" out of the market. The answers to the defendants' prayers, so far as they tend to show that no contract had been concluded, were, therefore, favorable rather than hurtful to the plaintiff's case, and they furnish no just ground for complaint.

The court, however, erred in charging the jury that if they believed "the corporation never gave any authority to the defendant, Watkins, to assent to the proposal, or draft agreement, in their behalf, and in their name, and never sanctioned the same as a corporate act, the suit could not be maintained against them." If by

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this it was meant that no suit upon the contract could be maintained, the instruction was correct, but this could not have been so understood by the jury. No such question was before them. It does not follow, because the corporation never authorized or sanctioned a contract, that they may not be responsible for such a fraud as was alleged in the petition. We have not all the evidence before us, but it does appear that some evidence was given tending to show that the acts and conduct of the defendants, (Watkins and the corporation,) were deceitful and fraudulent, designed to mislead, and done for the purpose of keeping the plaintiff's cotton-tie out of the market, in order that they might secure heavy sales of the Beard tie, in which they were largely interested. If the evidence did establish or tended to establish such deceit and fraud, for such a purpose, and if the plaintiff was injured thereby, as his petition alleged, it was erroneous to charge the jury that the suit could not be maintained. Competition in efforts to secure the market is doubtless lawful. A manufacturer may by superior energy, or enterprise, supply all the buyers of a particular article, and thus leave no market for similar articles manufactured by others. But he may not fraudulently or by deceitful representations induce another to withhold from sale his products without being answerable for the injury occasioned by the fraud. Whether negotiations for a purchase never concluded were in fact fraudulent; whether they were commenced and continued solely with the purpose of dishonestly inducing the plaintiff to forego offering his goods until the market had been supplied, and whether such was the consequence of the defendants' fraudulent conduct, were questions of fact which should have been submitted to the jury on the evidence. If answered affirmatively, the action was sustainable. In order to maintain an action for fraud it is sufficient to show that the defendant was guilty of deceit, with a design to deprive the plaintiff of some profit or advantage, and to acquire it for himself, whenever loss or damage has resulted from the deceit. This was well illustrated in *Barley v. Walford*, 9 Adolphus & Ellis, N. S., 197. There it appeared that a plaintiff, who was a dealer in silk goods, had been hindered in his trade and induced to refrain from making goods with a certain ornamental design, by false representation made by the defendant, and known by him to be false, that a pattern of the goods had been registered by another, and it was ruled that an action would lie to recover damages for the injury, especially when the deceit was with a view to secure some unfair advantage to the defendant.

We think also the court erred in refusing to receive in evidence

Syllabus.

the defendants' letters to Wailey in connection with Wailey's testimony. It was an important inquiry in the case, what was the purpose or animus of the defendants in their negotiations with the plaintiff? Was it to mislead him by holding out false hopes of consummating an arrangement by which his cotton-tie could be introduced into the market, and was this in order to secure the defendants themselves against competition? Deceit in effecting such a purpose lay at the basis of the action. But how can such a purpose be shown when it has not been avowed? Actual fraud is always attended by an intent to defraud, and the intent may be shown by any evidence that has a tendency to persuade the mind of its existence. Hence, in actions for fraud, large latitude is always given to the admission of evidence. If a motive exists prompting to a particular line of conduct, and it be shown that in pursuing that line a defendant has deceived and defrauded one person, it may justly be inferred that similar conduct towards another, at about the same time, and in relation to a like subject, was actuated by the same spirit. If therefore it be true that in the spring or early summer of 1868 the defendant had similar negotiations with Wailey respecting his cotton-tie, and conducted towards him deceitfully in order to keep his tie out of the market that year, the fact tends to show that in their conduct towards the plaintiff, there was the same animus, and that they had the same object in view. That the evidence offered was admissible for that purpose is abundantly proved by the authorities. *Castle v. Bullard*, 23 Howard, 172; *Lincoln v. Claffin*, 7 Wallace, 73, § 23.

JUDGMENT REVERSED AND A NEW TRIAL ORDERED.

PAIGE v. BANKS.

(13 Wallace, 608.)

1. Where in consideration of an agreement by publishers to pay him a certain sum of money, and the performance of specified duties in connection with the publication, a reporter of judicial decisions agreed in 1828 "to furnish in manuscript the reports of his court for publication," with an additional clause that the "publishers shall have the copyright of said reports, to them and their assigns forever," held, on bill filed by the reporter's executrix for injunction, and account of profits after the expiration of twenty-eight years from the entry of copyright, (A. D. 1830,) that the publishers had a full right of property in the manuscript; and accordingly that they could publish not only for the twenty-eight years during which the act of May 31st, 1790, (the only copyright act in force when the agreement was made,) gave an author and his *assigns* the exclusive right to print, reprint, publish, and vend, but also during the fourteen years granted by an act of 3d February, 1831, subsequently passed, by which the exclusive right was continued to the

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- author if alive, or if dead to his *widow, child, or children*; the reporter not having died till 1868.
2. *Held*, further, that this view was confirmed by the fact that a notice had been given in 1858, by the reporter to his publishers, that he himself claimed the right to publish on the expiration of the first twenty-eight years, and forbid them to publish further, and that they in reply denied his right and asserted their own, and that though the reporter lived, as already said, till 1868, ten years after this correspondence, no further notice was taken of this subject, and no attempt by the reporter, by act or protest, to interfere with the exercise of the right of the publishers to publish and sell.

APPEAL from a decree of the Circuit Court for the Southern District of New York; the case being thus:

Congress by a copyright law of 31st May, 1790, (1 Stat. at Large, 124,) enacted that the author and authors of any book or books, "and his or their executors, administrators, or *assigns*," should have the sole right and liberty of printing, reprinting, publishing, and vending such book or books for the term of fourteen years. And if, at the expiration of the said term the said author or authors should be alive, that the same exclusive right should be continued to him or them, "his or their executors, administrators, or *assigns*, for the further term of fourteen years."

With this law in force as governing the subject of copyrights, the late Mr. Alonzo Paige, of New York, reporter of its Court of Chancery, entered, on the 7th of October, 1828, into an agreement with Gould & Banks, law publishers of that State, thus:

"That the said Alonzo, during the term of five years from the 28th of April last, shall and will furnish the said Gould & Banks, *in manuscript*, the reports of the said court for *publication*, and that the said Gould & Banks *shall have the copyright of said reports to them and their heirs and assigns forever*.

"And the said Gould & Banks agree to and with the said Alonzo, that they will publish said reports in royal octavo volumes of between 600 and 700 pages, on paper and type suitable for such a work; that they will deliver to the said Alonzo twelve copies free of expense; that they will sell said reports to the members of the bar of New York at a sum not exceeding \$6 per volume, bound in calf, for each volume they shall so sell within one year next subsequent to the publication of such volume.

"And the said Gould & Banks agree to pay to the said Alonzo \$1,000 per volume for every volume they shall publish, and at the same rate for less than a volume, within six months after the publication of each volume.

"It is understood that the said Alonzo is to read and correct the proof-sheets of said reports as the same are furnished him."

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Mr. Paige did accordingly furnish to Gould & Banks the manuscript of the volume known as 1st Paige's Chancery Reports; and on the 5th of January, 1830, Gould & Banks took out the copyright therefor in their own names.

On the 3d of February, 1831, that is to say, about two years and a half after the date of the agreement between the parties, Congress amended the copyright law, (4 Stat. at Large, 439,) enlarging the rights of copy. The new statute enacted:

"That whenever a copyright shall have been heretofore obtained by an author . . . of any book, &c., if such author . . . be living at the passage of this act, then such author . . . shall continue to have the same exclusive right to his book, . . . with the benefit of each and all the provisions of this act for the security thereof, for such additional period of time as will, together with the time which shall have elapsed from the first entry of said copyright, make up the term of twenty-eight years.

"That if at the expiration of the aforesaid term of years, such author . . . be still living, and a citizen . . . of the United States, or resident therein, or being dead, shall have left a widow, or child, or children, either or all then living, the same exclusive right shall be continued to such author; . . . or if dead, *then to such widow and child or children* for the further term of fourteen years."

The twenty-eight years of right given by the act of 1790, expired on the 5th of January, 1858. Gould & Banks conceiving themselves to be entitled to renewal under the act of 1831, on the 3d of October, 1857, went through the usual process to secure a copyright for the extended term. Mr. Paige, on the 3d of January, 1858, conceiving that the extension enured to *his* benefit, did the same, and on the 13th following informed Gould & Banks that he had thus renewed his copyright, and calling their attention to the fact, that by this renewal "all right on their part to print, publish, or vend volume first of his reports had ceased," and calling on them "henceforth to refrain from printing, publishing, or vending it."

To this Gould & Banks, referring to the contract of October 7th, 1828, reply:

"*First.* Your manuscripts were furnished to us for publication without limit as to time, and, therefore, whatever be your rights under the law of 1831, we have an unlimited license to publish and sell.

"In the second place, where the entire interest in the copyright has been assigned, we consider the provisions of the act of 1831 to have been intended to enure to the benefit of the assignee."

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They accordingly notify to Mr. Paige that they shall themselves take out all of the renewals of the copyright, "and hold him liable for all damages consequent on any infringement of their rights."

Things remained in this state till March 31st, 1868, when Mr. Paige died; and in about ten months afterwards, and after some correspondence with a view to amicable adjustment, his executors filed a bill for injunction against further printing and vending, and for an account of profits after January, 1858.

The court below (Blatchford, J.) dismissed the bill, (7 Blatchford, 154,) and the executors of Mr. Paige appealed to this court.

Messrs. Clarkson Nott Potter and W. W. Campbell, for the appellants:

The intention of the parties, to be collected from the whole agreement, was simply to convey the copyright, though it may be admitted for the sake of argument that the agreement contains provisions sufficient to create a license if the copyright had not been specifically conveyed. Now, this thing called "copyright" is, so far as the law recognizes it, or so far as it is a matter of practical value and of sale, a creature of statute. A man has no more "copyright" than what the statute gives him. When this agreement was made Mr. Paige had the exclusive right in himself and in his assigns to print, publish, and sell, at the longest, for a term of twenty-eight years; and no greater or additional right. That assuredly is what he meant to sell, and all that he meant to sell. Now a new statute—one not dreamt of by any one in 1828—gives to Mr. Paige subsequently a new and different sort of right. How can it be said that Mr. Paige meant to assign *that* when he assigned the other? There are no words in his agreement such as "whatever copyright he may hereafter have granted to him;" by which it might be inferred that he meant to part with more property than he had; an inference not to be made easily in any case. Questions have arisen often in the kindred case of patents, how far a grant of a patent right carried a subsequent extension of it. In *Wilson v. Rousseau*, 4 Howard, 682, a covenant by the patentee prior to the Patent Act of 1836, which authorized extensions, that the covenantee should have the benefit of *any* improvement in the machinery, or *alteration* or *renewal* of the patent, was held not to exclude an extension by an administrator under that act; and this court was not unanimous in holding that an extension passed even in such a case as *Railroad Company v. Trimble*, 10 Wallace, 367, where a patentee conveyed all the right, title, and interest which he had in the "same invention," as secured to him by letters patent,

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and also all "the right, title, and interest which *may* be secured to him from *time to time*, the same to be held by the assignee for his own use and for that of his legal representatives, "to the full end of the term for which said letters are or *may* be granted."

2. The copyright act of 1790 gives the right to the author and to his *assigns*. The act of 1831, which created this new term, gives it specifically to the author if living, to *his family* if he is dead. Assignees are not mentioned in it, nor provided for. It looks much as if Congress in this case had meant specially to take care of men of literary genius; often as we know not men of business, and, therefore, subject to be hardly dealt with by the trade. A book is rarely much demanded after it has been published twenty-eight years. Some books, the works of men of high genius, are as much so or more than ever. The provision seems specially to have been for the authors of them, and for their families, just as Congress by various acts provides for our soldiers, our occupants of bounty lands, making very liberal provisions for them and for their families, but declaring that their vendees shall take nothing. Mr. G. T. Curtis, in his work on Copyright, page 235, questions whether the author by any assignment could dispose of the contingent interest given by the act of 1831, so as to deprive his widow and children of the right in case of his death. A similiar provision in the patent law has been construed by this court against the right. *Wilson v. Rousseau*, 4 Howard, 646; *Bloomer v. McQuewan*, 14 Id., 539.

We have the benefit of the views on the circuit by Mr. Justice Nelson, in the case of *Cowen v. Banks*, 24 Howard's Practice Cases, 72, in support of the position which we take. There the reporter Cowen had assigned in 1823 to this same house of Gould & Banks, the copyright of his reports by an instrument like the present one. A copy of the instrument was shown to the court from the judgment roll of the case. He lived till 1844, that is to say, three years after the expiration of his first term of copyright. The executrix of the reporter after his death claiming the fourteen years of the extended term of twenty-eight years, given by statute of 1790, to authors or their *assigns*, filed a bill for injunction and account. His honor, Judge Nelson, after careful consideration, decided in her favor. It is true indeed that he decreed ultimately in favor of the publishers, on a cross action brought by them to amend the agreement, so as to convey all the interest of Mr. Cowen in the extended term. On the hearing of that cross-bill a deposition of Mr. Cowen given in a prior suit brought by the publishers against one Hastings, as a violator of the copyright, was read in

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evidence. In this deposition Mr. Cowen testified "*that it was his intention, by the agreement, to convey his whole interest in the copyright of the work,*" and he added: "I supposed the book to belong to my assignees, as soon as made, including all that was in it. I would not have taken the office of reporter, with its salaries and duties, unless I was to have a proprietary right which I could use or dispose of." The present case is much stronger than that of Mr. Cowen, for the term claimed by his representatives, was the second term granted by the statute of 1790, in case the author lived through the first fourteen years; a term grantable under the statute to assigns; while what we have claimed is the extension granted by the statute of 1831, an extension conferred on the author and his family, and where the rights of assigns seem to have been carefully excluded.

Messrs. Joseph Laroque and E. E. Anderson, contra.

Mr. Justice DAVIS delivered the opinion of the court.

The whole controversy turns upon the true interpretation of the agreement made on the 7th October, 1828.

Independent of any statutory provision the right of an author in and to his unpublished manuscripts is full and complete. It is his property, and, like any other property, is subject to his disposal. He may assign a qualified interest in it, or make an absolute conveyance of the whole interest.

The question to be solved is, do the terms of this agreement show the intent to part with the whole interest in the publication of this book, or with a partial and limited interest?

The agreement on the one side is "to furnish, in manuscript, the reports of said court for publication," with an additional clause that the publishers "shall have the copyright of said reports to them and their assigns forever." The cause or consideration of this agreement is a stipulation by the other side for a certain sum of money, and the performance of certain duties in connection with the publication.

It is insisted by the appellants that a just interpretation confines the agreement to a mere assignment of the interest in such copyright, as is provided for in the act of 31st May, 1790; that this was the law in force when the contract was entered into; that the fourteen years therein provided for, with the right to a prolongation of fourteen years more, is all that the publishers, at most, are entitled to, and that they are excluded necessarily from the benefit of the provisions conferred by the act of the 3d February, 1831, granting to authors an additional extension of fourteen years.

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In our view this is too narrow a construction. The fair and just interpretation of the terms of the agreement indicate unmistakably that the author of the manuscript, in agreeing to deliver it for publication at a stipulated compensation, intended to vest in the publishers a full right of property thereto.

The manuscript is delivered under the terms of the agreement "for publication." No length of time is assigned to the exercise of this right, nor is the right to publish limited to any number of copies. The consideration is a fixed sum of \$1,000. Whether one or one hundred thousand copies were published, the author was entitled to receive, and the publishers bound to pay, this precise amount.

As between the parties to the agreement the absolute interest was conveyed by the stipulation of Paige, that he would furnish the manuscript for publication. Paige could no longer do any act after such delivery for publication inconsistent with the absolute ownership of the publishers. But it was proper, for the protection of the publishers, that they should be in position to assert the remedies given by the law against intruders, and it is to this end it is added in the agreement, "*and the said Gould & Banks shall have the copyright of said reports to them, their heirs, and assigns forever.*" It is not covenanted that the publishers should take out the copyright, nor is there any express agreement for an assignment to them by Paige, if he should take it out. Undoubtedly the provision, that the publishers "*should have the copyright,*" would authorize them to apply for it, and if Paige had taken it out in his own name it would have enured to their benefit. But, as between Paige and the publishers, the rights of the latter could not be estimated differently, whether they had or had not availed themselves of the provisions of the act.

We have been referred to the case of *Cowen v. Banks*, in which Mr. Justice Nelson, on a similar agreement, expressed the opinion that the construction now contended for by the appellants was the true one. No reason is assigned by the judge for his opinion, and the case was such that it was not necessary that this point should be maturely considered. The practical construction by Judge Cowen of his own contract, in opposition to his interest, is cited in the decision to which we are now referring, together with the fact that the judge died in 1844, three years after the expiration of the first term of the copyright. On this it said, with some emphasis, (24 Howard's Practice Cases, 72,) "that he had all this time acquiesced in the claim of the assignee." The decree was that the contract be reformed accordingly.

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In the case now before us the construction contended for by the appellants was, for the first time, urged by letter of Mr. Paige, 13th January, 1858, addressed to the appellees, who replied on 3d February following, asserting their absolute right of ownership, with an unlimited license to publish and sell. The parties lived together after this in the same State until 31st March, 1868, when Paige died, a period of ten years, during which no further notice was ever taken of this subject, and no attempt by Paige, by act or protest, to interfere with the exercise of the right of the appellees to publish and sell. It is difficult to account for this long acquiescence upon any assumption that Paige, after the receipt of the reply to the publishers, had faith in the construction now urged. If this agreement needed any extraneous aid to indicate the intention of the parties, this acquiescence would certainly be persuasive of the view we have taken of it.

DECREE AFFIRMED.

MOWRY v. WHITNEY.

(14 Wallace, 434.)

1. The ancient mode of annulling or repeating the king's patent was by *scire facias*, generally brought in the chancery where the record of the instrument was found.
2. In modern times the court of chancery, sitting in equity, entertained a similar jurisdiction by bill when the ground of relief is fraud in obtaining the patent, and in this country it is the usual mode in all cases, because better adapted to the investigation and to the relief to be administered.
3. But *scire facias* could only be sued out in the English courts by the king or his attorney general, except in cases where two patents had been granted for the same thing to different individuals, and the sixteenth section of the act of July 4th, 1836, concerning patents for inventions, is based upon analogous principles.
4. Both upon this authority and upon sound principle no suit can be brought to set aside, annul, or declare void, a patent issued by the government, except in the class of cases above mentioned, unless brought in the name of the government or by the authority or permission of the Attorney General, so as to be under his control.

APPEAL from the Circuit Court for the Eastern District of Pennsylvania; the case being thus:

Asa Whitney, of Philadelphia, had obtained, on the 25th April, 1848, a patent for fourteen years for an improvement in annealing and cooling cast-iron car-wheels. This patent expired, of course, by its terms, on the 25th of April, 1862.

Just before its expiration, that is to say, on the 21st of March, Albert Mowry, of Cincinnati, also obtained a patent for fourteen

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years, for a process for annealing car-wheels, of which he professed to be the inventor.

In March, 1862, Whitney—the expiration of his patent now approaching—applied to the Commissioner of Patents for an extension of the patent for seven years more. This extension was applied for in pursuance of a provision of the Patent Act of 1848, (act of May 27th, 1848, 6 Stat. at Large, 231, amending the act of July 4th, 1836, 5 Id., 124,) which authorizes an extension where the patent has not been remunerative, and the act, therefore, requires that the patentee when applying for the extension shall—

“Furnish to the Commissioner of Patents a statement in writing, under oath, of the ascertained value of the invention, and of his receipts and expenditures sufficient in detail to exhibit a true and faithful account of loss and profit, *in any manner*, accruing to him from, and by reason of, the said invention.”

Whitney did furnish to the Commissioner a statement, which purported to be such as the act required; and accordingly the extension was granted April 25th, 1862, for seven years from that date, or in other words, until 25th of April, 1869.

On the 21st of March, 1866, Whitney filed a bill in the Circuit Court for the Southern District of Ohio, to enjoin Mowry against proceeding in his business of annealing car-wheels, on the ground that he, Mowry, by his process of annealing, was infringing his, Whitney's, patent; and it being decided in the Circuit Court April 5th, 1867, on the hearing of the case, that Mowry was, by his plan of annealing, infringing Whitney's patent, the question of damages came up. This being referred to a master, Whitney, in order to swell his damages, sought to prove (as Mowry alleged) that his profits had been very large; greatly larger than what he had sworn they were in the statement which he made before the Commissioner when seeking his extension.*

Hereupon, April 7th, 1870, Mowry filed a bill in chancery in the court below, representing the fact of Whitney's patent, and of the extension of it, (annexing as exhibits all the patent, the certificate of extension, and all the affidavits and estimates on which the extension had been granted;) setting forth his own patent, that he was sued by Whitney in a suit still pending; that in the progress of investigation necessary to his defense in that suit he had discovered the fraud by which the extension was obtained, and praying that it might be declared that Whitney's letters, granted on the

*For an account of this controversy see *infra*, p. 411.

Argument for the appellant.

25th of April, 1848, and extended on the 7th of April, 1862, were, and are void and of no effect from and after the 25th of April, 1862.

The Patent Act of 1836, (5 Stat. at Large, 124,) it should be added, by its 16th section thus enacts:

"That whenever there shall be two interfering patents, or whenever a patent, on application shall have been refused on an adverse decision of a board of examiners, on the ground that the patent applied for would interfere with an unexpired patent previously granted, any person interested in any such patent, either by assignment or otherwise, in the one case, and any such applicant in the other case, may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge and declare either the patents void, in the whole or in part, or inoperative and invalid in any particular part or portion of the United States, according to the interests which the parties to such suit may possess in the patent or the inventions patented; and may also adjudge that such applicant is entitled according to the principles and provisions of this act to have and receive a patent for his invention as specified in his claim, or for any part thereof, as the fact of priority of right or invention shall in any such case be made to appear. And such adjudication, if it be in favor of the right of such applicant, shall authorize the Commissioner to issue such patent, on his filing a copy of the adjudication and otherwise complying with the requisitions of this act: *Provided, however,* That no such judgment or adjudication shall affect the rights of any person except the parties to the action, and those deriving title from or under them, subsequent to the rendition of such judgment."

To the bill filed as above mentioned by Mowry, Whitney demurred, on these two, among other grounds:

1. That it appeared from the bill that the government of the United States was a necessary party complainant, but that the government was not made a party, nor was the suit brought at the instance of, nor by the authority, nor with the consent of the government.

2. That it appeared by the bill that the term for which the letters patent sought to be canceled were granted and extended had expired before the commencement of the suit.

The court below sustained the demurrer on these grounds and dismissed the bill. From that decree Mowry took this appeal.

Messrs. A. G. Thurman and C. B. Collier, for the appellant:
The bill charging and the demurrer confessing that the exten-

Argument for the appellee.

sion was procured by fraud, the extended patent must be regarded as void, *ab initio*, and as conferring no monopoly upon the patentee as against the public or the complainant.

Notwithstanding the expiration by limitation of Whitney's patent prior to the filing of the bill, the extended patent, until declared void for fraud, was and is alive and in effect for all purposes of suit for infringements of it that occurred during its existence. Patent Laws, act of 1870, § 55.

By reason of the fact that Whitney's patent had expired prior to the filing of the complainant's bill, the government was neither a necessary nor a proper party to the bill, and by reason of such expiration the bill could not have been maintained in the name of the government, it having no interest in the subject-matter of the controversy. *Bourne v. Goodyear*, 9 Wallace, 811.

Mowry, as appears on the face of his bill, has a direct and personal interest in the subject-matter of the suit; he is sued by Whitney for an alleged infringement of his patent in the Circuit Court for Ohio; he cannot avail himself of the fraud of the patentee as matter of defense to the suit in that court and in that cause; he is without remedy save in the court and according to the manner in which he has sought it by this proceeding. *Wood v. Williams*, 1 Gilpin, 517.

The extension of the patent having been confessedly procured fraudulently, and the government not being able to maintain a suit in relation to the patent by reason of its expiration, and having no further interest in it, the suit was properly and could only be brought by one who had a continuing interest in the patent, and whose rights were, notwithstanding its expiration, affected by it.

The primary object of the suit is that the complainant may be relieved from a prosecution which is contrary to equity and good conscience, and the court is asked to find and declare that the patent, having been procured fraudulently, was *ipso facto* void as antecedent to obtaining the relief prayed for.

Mr. Henry Baldwin, Jr., contra :

There is no provision of law for any such proceeding as this to repeal a patent; and any proceeding for that purpose must be at the instance of the government. Instead of this bill being filed by the authority or with the consent of the government, it is on its face filed by an adjudged infringer against a patentee whose rights he has invaded, and whose statute remedy he now seeks to enjoin.

The demurrer admits the facts stated in the bill only so far as they are relevant and well pleaded. On the complainant's own

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showing, the allegations of fraud and suppressions and concealment stated in the bill are refuted by the exhibits annexed thereto and making part thereof.

The account rendered by the respondent to the Commissioner of Patents in connection with his application for extension, and a copy of which is annexed to the bill, is a public document on file, and of record in the United States Patent Office at Washington city, for more than eight years prior to the commencement of this suit. During all this time it has been accessible to the knowledge and inspection of this appellant. Upon recourse to these records he could have discovered what he now relies on as newly-discovered evidence. *Rubber Co. v. Goodyear*, 9 Wallace, 805; *Lord v. Goddard*, 13 Howard, 198, (211); *Truly v. Wanzer*, 5 Id., 141, (143.)

The bill shows that the extended term of the respondent's patent expired April 24th, 1869, while this proceeding was not commenced until April 7th, 1870, nearly twelve months thereafter.

There is consequently no equity to support this application to set the extension aside, nor does anything remain which can be the subject of a suit. *Bourne v. Goodyear*, 9 Wallace, 811; *Minnesota Co. v. National Co.*, 3 Id., 332.

Mr. Justice MILLER delivered the opinion of the court.

The bill was demurred to, and the demurrer sustained, on two grounds:

First. That the extended patent had expired, by its own limitation, before the bill was filed; and

Secondly. That the complainant could not, in his own right, sustain such a suit.

As regards the first of these propositions we do not deem it necessary to make any decision. When a case arises in which the United States, or the Attorney-General, shall initiate a suit to have a patent declared null, *ab initio*, which, though no longer in force as to present or future infringements, is used to sustain suits for infringements during its vitality, the question will be considered; for we are of opinion that no one but the government, either in its own name or the name of its appropriate officer, or by some form of proceeding which gives official assurance of the sanction of the proper authority, can institute judicial proceedings for the purpose of vacating or rescinding the patent which the government has issued to an individual, except in the cases provided for in section sixteen of the act of July 4th, 1836.

The ancient mode of doing this in the English courts was by

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scire facias, and three classes of cases are laid down in which this may be done.

1. When the king, by his letters patent has by different patents granted the same thing to several persons, the first patentee shall have a *scire facias* to repeal the second.

2. When the king has granted a thing by false suggestion, he may by *scire facias* repeal his own grant.

3. When he has granted that which by law he cannot grant, he *jure regis*, and for the advancement of justice and right, may have a *scire facias* to repeal his own letters patent. 4 Institutes, 88; Dyer, 197-8, and 276, 279.

The *scire facias* to repeal a patent was brought in chancery, where the patent was of record. And though in this country the writ of *scire facias* is not in use as a chancery proceeding, the nature of the chancery jurisdiction and its mode of proceeding have established it as the appropriate tribunal for the annulling of a grant or patent from the government. This is settled, so far as this court is concerned, by the case of the *United States v. Stone*, 2 Wallace, 525, in which it is said that the bill in chancery is found a more convenient remedy. A bill of this character was also sustained in the English chancery in the case of the *Attorney General v. Vernon*, 1 Vernon, 277, on the ground of the equitable jurisdiction in matters of fraud. And in the case of *Jackson v. Lawton*, 10 Johnson, 24, Chancellor Kent says that in addition to the writ of *scire facias*, which has ceased to be applicable with us, there is another remedy by bill in the equity side of the court of chancery.

It will be observed that in the case of a conflict under two patents granting the same right, the *scire facias* may, according to the authorities cited, be brought in the name of one of the patentees; but in the other cases, when the patent was obtained by a fraud upon the king, by false suggestion, or where it was issued without authority, and for the good of the public and right and justice it should be repealed, the writ is to issue in the king's name or his attorney general's. It is also said that when a patent is granted to the prejudice of the subject, the king of right is to permit him, upon his petition, to use his name for the repeal of it, in *scire facias* at the king's suit. *The King v. Sir Oliver Butler*, 3 Levinz, 220.

The 16th section of the Patent Act of 1836 seems to have in view the same distinction made by the common law in regard to annulling patents, for while it authorizes individuals claiming under conflicting patents, or one whose claim to a patent has been

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rejected because his invention was covered by a patent already issued, to try the conflicting claim in chancery, and authorizes the court to annul or set aside a patent so far as may be found necessary to protect the right, the suit by individuals is limited to that class of cases. And it is provided that the decree shall be of no validity except between the parties to the suit. The general public is left to the protection of the government and its officers.

It seems reasonable that the remedy by bill in chancery, which is substituted for the *scire facias*, should have the like limitation in its use. The reasons for requiring official authority for such a proceeding are obvious. 1. The fraud, if one exists, has been practiced on the government, and as the party injured, it is the appropriate party to assert the remedy or seek relief. 2. A suit by an individual could only be conclusive in result as between the patentee and the party suing, and it would remain a valid instrument as to all others. 3. The patentee would or might be subjected to innumerable vexatious suits to set aside his patent, since a decree in his favor in one suit would be no bar to a suit by another party. If, on the other hand, an individual finds himself injured, either specially or as a part of the general public, it is no hardship to require him to satisfy the Attorney General that the case is one in which the government ought to interfere, either directly, by instituting the suit, or indirectly, by authorizing the use of its name, by which the Attorney General would retain such control of the matter as would enable him to prevent oppression and abuse in the exercise of the right to prosecute such a suit.

It would seriously impair the value of the title which the government grants after regular proceedings before officers appointed for the purpose, if the validity of the instrument by which the grant is made can be impeached by any one whose interest may be affected by it, and would tend to discredit the authority of the government in such matters.

DECREE AFFIRMED.

NICOLSON PAVEMENT COMPANY v. JENKINS.

(14 Wallace, 452.)

An assignment of a reissued patent, reciting the date and number of the reissue, and that the original patent had been "given for the term of fourteen years;" reciting that the assignee had agreed to purchase all the right, title, and interest which the patentee had "in the *said invention* as secured by the *said letters patent*;" and transferring to the assignee all the right, title, and interest which the patentee has "in the *said invention and letters patent*;" "the same to be held and enjoyed

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by the said party for the use and behoof of him and his legal representatives to the full end of the term for which the said letters patent are or may be granted, as fully and effectively as the same would have been held and enjoyed by the assignor had the assignment never been made," will transfer an extension and renewal of the patent made under the acts of July 4th, 1836, and of May 27th, 1848; and this though the patent be reissued subsequently to the assignment.

ERROR to the Circuit Court for the District of California; the case being thus:

On the 8th of August, 1854, Samuel Nicolson obtained letters patent for an improvement on wooden pavements. On the 1st of December, 1863, he obtained a reissue. He then, December 1st, 1864, made an assignment to Jonathan Taylor thus:

"Whereas I, Samuel Nicolson, invented a certain new and useful improvement in wooden pavements, of which letters patent of the United States of America (numbered 1583 of reissued patents, and bearing date the 1st of December, 1863) have been granted to me, giving to me and my legal representatives the exclusive right of making, using, and vending the said invention throughout the said United States; the original patent being dated August 8th, 1854, and given for the term of fourteen years.

"And whereas Jonathan Taylor has agreed to purchase from me all the right, title, and interest which I have in and to the *said* invention for and in the city of San Francisco, as secured by the *said* letters patent, and has paid to me the sum of one dollar, the receipt whereof is hereby acknowledged.

"Now, therefore, this indenture witnesseth, that for and in consideration of the said sum to me paid, I have assigned, sold, and set over, and do hereby assign, sell, and set over, unto the said Taylor, all the right, title, and interest which I have in the *said* invention and letters patent for and in the said city of San Francisco, but in no other place.

"The same to be held and enjoyed by the said Taylor for the use and behoof of him and his legal representatives to the full end of the term for which the said letters patent are or may be granted, as fully and effectively as the same would have been held and enjoyed by me had this assignment never been made."

Afterwards, August 20th, 1867, Nicolson obtained another reissue of the same letters patent on an amended specification; and he having died in January, 1868, intestate, the Commissioner of Patents, on the application of his administrator, on the 7th of July, 1868, renewed and extended the letters patent for seven years from the 8th of August, 1868, under the well known 18th

Argument for the defendant in error.

section of the act of July 4th, 1836, and the act of Congress of May 27th, 1848.

The right (whatever it was) which was vested in *Taylor under the assignment*, being subsequently transferred to the Nicolson Pavement Company, and that company having laid a large extent of the patented pavement in San Francisco, after the expiration of the original patent, one Jenkins, who had obtained from the *administrator* of Nicolson whatever right was vested in *him* under the renewal and extension of 1868, sued the company.

The question, of course, was whether the assignment from Nicolson to Taylor of December 1st, 1864, vested any estate, right, title, or interest in the assignee, in or to the extended or renewed term, which was acquired by Nicolson's administrator under the act of Congress, subsequent to the date of the assignment.

The court below thought that it did not, and gave judgment against the company. From that judgment the company brought the case here.

Mr. T. T. Crittenden, for the plaintiff in error:

The Commissioner of Patents having been authorized by statute to grant extensions for seven years, the original letters patent then became virtually a patent for twenty-one years. No one can in view of well-known decisions of this court deny that the inchoate right of the inventor to the exclusive privileges under an extension of letters patent is the subject of a sale, and certainly the words of this assignment in the concluding part of it are applicable only to a design to convey both a present and future interest.

Mr. M. H. Carpenter, (a brief of Mr. J. R. Sharpstein being filed,) contra:

The recitals in the assignment show that the original patent had been issued for the term of fourteen years, and that before the expiration of the term there had been a reissue of the patent; that Taylor had agreed to purchase a certain interest in said invention, "*as secured by said letters patent*" (the letters patent recited); that in consideration of the premises he assigned, sold, and set over to said Taylor his interest "*in the said invention and letters patent*," the letters patent thereinbefore mentioned. Thus far there is no allusion to any term or letters patent other than the original term of fourteen years, and the letters patent originally issued, and the reissued letters recited.

These form the entire subject-matter of the contract. There can be no doubt as to the intention of the parties, unless certain words

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in the *habendum* clause, contrary to the ordinary rules of construction, can be construed as extending the contract to a subject-matter not before embraced, or referred to, in the recitals or granting portions of the deed. As we have seen, the *habendum* clause is, "the same to be held and enjoyed . . . to the full end of *the term* for which the *said* letters patent are or *may* be granted." The words "may be granted" are the only ones in the whole instrument that can be thought to point to an extension that might subsequently be acquired. But they must be read in connection with, and in subordination to, the rest of the instrument, and this very clause refers to "*the term* for which the *said* letters patent," &c. A single term is referred to, and the *said* letters patent. The reference is in terms to the term and the letters patent already mentioned. The phrase "may be granted," seems to be an expression loosely used, and without any definite meaning in the connection in which it is found, unless it refers to other reissues of patents covering the remainder of said term. There had already been one reissue, and the facts show that a second reissue was had for the remainder of the term after this assignment, doubtless to cover some defect. These reissues are authorized by the act of Congress, and often occur. In a certain sense, when the patents thus originally issued are surrendered and others issued in their place, the whole may be regarded as the same letters patent. They cover the same term. The reissued patent covers no improvement or extension, but is intended to rectify some error, or remedy some defect, and accomplish the identical object intended to be accomplished by the letters originally issued. In this sense they are substantially the same letters patent. In this view the words "may be granted" may have some significance as used in this instrument, and they are satisfied by applying them to any further letters patent that might be issued for the same term and to accomplish the same objects intended by those already issued. And in this instance there was a subsequent reissue for the remainder of the term, to which they might in fact apply. But upon a view of the whole instrument, to construe them as referring to a new term, and letters patent not yet *in esse*, would be doing violence to the language.

Mr. Justice DAVIS delivered the opinion of the court.

An assignment of an interest in an invention secured by letters patent is a contract, and, like all other contracts, is to be construed so as to carry out the intention of the parties to it. It is well settled that the title of an inventor to obtain an extension may be the subject of a contract of sale, and the inquiry is whether the instru-

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ment of sale employed in this case did secure to the purchaser an interest not merely in the original letters patent, but in any subsequent extension of them. It recites the invention and the agreement of Taylor to purchase the right to use it in the city of San Francisco, and then conveys to him all the title and interest which Nicolson had in the *invention* and letters patent for and in the said city ; to be enjoyed by Taylor and his legal representatives to the full end of the term for which the said letters patent are, or *may be granted*. There is no artificial rule in construing a contract, and effect, if possible, is to be given to every part of it, in order to ascertain the meaning of the parties to it. Taking this whole deed together, it is quite clear that it was intended to secure to Taylor and his assigns the right to use the invention in San Francisco, as long as Nicolson and his representatives had the right to use it anywhere else. Manifestly something more was intended to be assigned than the interest then secured by letters patent. The words “to the full end of the term for which the said letters patent are or may be granted” necessarily import an intention to convey both a present and a future interest, and it would be a narrow rule of construction to say that they were designed to apply to a reissue merely, when the invention itself by the very words of the assignment is transferred. It was easy to have restricted the right to use the invention to the end of the term of the original letters and reissues, but this was not done; and in view of the right of the inventor in certain contingencies to a renewal—which must have been well known to both buyer and seller of this kind of property—we are led to the conclusion that both parties contracted with reference to it. The case of *The Railroad Company v. Trimble*, 10 Wallace, 367, is not different in principle from this, although in that case the language used is somewhat broader.

JUDGMENT REVERSED AND A VENIRE DE NOVO AWARDED.

GORHAM COMPANY v. WHITE.

(14 Wallace, 511.)

1. The acts of Congress which authorize the grant of a patent for designs contemplate not so much utility as appearance; and the thing invented or produced for which a patent is given is that which gives a peculiar or distinctive appearance to the manufacture or article to which it is applied.
2. It is the appearance to the eye that constitutes mainly, if not entirely, the contribution to the public which the law deems worthy of recompense, and identity of appearance, or sameness of effect upon the eye, is the main test of substantial identity of design.

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3. It is not essential to identity of design that the appearance should be the same to the eye of an expert. If, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same—if the resemblance is such as to deceive such an observer, and sufficient to induce him to purchase one, supposing it to be the other—the one first patented is infringed by the other.

ERROR to the Circuit Court for the Southern District of New York; the case being thus:

The Patent Act of August 29th, 1842, (5 Stat. at Large, 543,) enacts :

“ That any citizen or citizens, &c., who, by his, her, or their own industry, genius, efforts, and expense, may have invented or produced any *new and original design for a manufacture, whether of metal or other material or materials, or any new and original design for the printing of woolen, silk, cotton, or other fabrics, or any new and original design for a bust, statue, or bas relief, or composition in alto or basso relieveo, or any new and original impression or ornament, or to be placed on any article of manufacture, the same being formed in marble or other material, or any new and useful pattern, or print, or picture to be either worked into or worked on, or printed, or painted, or cast, or otherwise fixed on any article of manufacture, or any new and original shape or configuration of any article of manufacture not known or used by others before his, her, or their invention or production thereof, and prior to the time of his, her, or their application for a patent therefor, and who shall desire to obtain an exclusive property or right therein to make, use, and sell, and vend the same or copies of the same to others, by them to be made, used, and sold, may make application in writing to the Commissioner of Patents, expressing such desire; and the Commissioner, on due proceedings had, may grant a patent therefor. The duration of said patent shall be seven years.”*

A subsequent act, (1 Stat. at Large, 248,) that of March 2d, 1861, re-enacts in substance the same things apparently, and makes some changes in the term of duration of the patent.

With these statutes in force, Gorham & Co., in July, 1861, obtained a patent for a new design for the handles of tablespoons and forks, which, under the name of the “cottage pattern,” became extremely popular; the most successful plain pattern, indeed, that had been in the market for many years.* The pattern is

* It was testified that the money value of the patent was “immense;” at least \$50,000; a very small percentage, as it appeared, of new patterns introduced into the

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represented, further on, in the left-hand design on page 401. Gorham & Co. subsequently transferred their patent to the Gorham Manufacturing Company.

In the year 1867 one White obtained a patent for a design which he alleged to be original with *him* for the same things; the handles, namely, of forks and spoons; and in 1868 a patent for still another design. Both of his designs are shown on the page already mentioned, alongside of the cottage pattern and to its right hand on the page.

Manufacturing and selling quantities of spoons and forks of these last two patterns, White interfered largely with the interests of the Gorham Manufacturing Company, and that company accordingly filed a bill in the court below to enjoin his making and selling spoons and forks under either of his patents. The validity of the patent held by the Gorham Company was not denied, nor was it controverted that the defendant had sold spoons and forks which had upon them designs bearing some resemblance to the design described in the patent held by the company. But it was contended that none of the designs on these articles thus sold were substantially the same as the design covered by the patent held by the company, and that they were independent of anything secured by that patent. The sole question, therefore, was one of fact. Had there been an infringement? Were the designs used by the defendant substantially the same as that owned by the complainants?

Much testimony upon the question of infringement was taken; the complainant producing witnesses sworn to by Mr. Tiffany, of the well-known firm of jewellers and silversmiths in New York, as representative men "in the trade under consideration, unexceptionable in every respect."

Mr. Cook, of the firm of Tiffany & Co., said:

"I should say that the patterns are substantially like one another. I think that an ordinary purchaser would be likely to take one for the other."

E. W. Sperry, a manufacturer of forks and spoons for thirty-seven years:

"I should say that the pattern of White of 1867 was certainly calculated to deceive any one but an expert. Any person seeing

market succeeding; 1 in 40 said one silversmith; not 1 in 20 said another; 1 in 10 to 1 in 50 said a third; 1 in 18 or 20 said a fourth; and it costing from \$3,000 to \$4,000 even to those in the trade to make the necessary dies to introduce any new pattern.

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one of the Gorham spoons or forks at one end of the table, and one of White's at the other end, could not tell the difference between them ; not one man in fifty."

Martin Smith, of Detroit, a merchant jeweller, dealing for ten years in silver spoons and forks :

"In my judgment, if the White pattern were placed in a store different from that in which they had before seen the cottage pattern, seven out of ten customers who buy silverware would consider it the same pattern."

Theodore Starr, of the Brooklyn firm of Starr & Marcus, merchant jewellers, eight years in business :

"The essential features I consider the same. The resemblance is such as would mislead ordinary purchasers."

H. H. Hayden, of New York, engaged for several years in manufacturing and selling metal goods :

"The two designs are substantially alike. In my opinion they would mislead, and would be considered one and the same pattern by the trade; by the trade, I mean customers as well as manufacturers."

Alfred Brabrook, agent of Reed & Barton, manufacturers at Taunton, Massachusetts, of Britannia metal and German silver plated ware :

"In many cases the resemblance would mislead ordinary purchasers."

J. T. Bailey, head of the house of Bailey & Co., large dealers in jewelry and silver at Philadelphia :

"I don't think that an ordinary observer would notice any difference *on a casual observation*. But, to a person skilled in this business, of course there are some small differences. I mean to say, that should an ordinary observer come into my store and take up the two spoons, he would not notice any difference in them, unless desired to examine them critically."

H. D. Morse, of the house of Crosby, Morse & Foss, jewellers and venders of silver in Boston, and whose department had been to a good extent designing :

"They are substantially the same thing so far as appearance goes ; substantially alike in regard to general effect, with a slight difference in outline. An ordinary observer would see no difference between them."

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James A. Hayden, the selling agent of Holmes, Booth & Haydens, manufacturers of spoons in New York:

"The similarity is so strong that it would not be detected without an examination more careful than is usually made by purchasers of such goods."

Mr. C. L. Tiffany, head of the house of Tiffany & Co., aged 55, and dealing in forks and spoons for more than twenty-five years:

"I have no hesitation in saying they are substantially alike. I think the resemblance would mislead ordinary purchasers; and being asked I certainly might myself be misled by it, if not beforehand told of the difference and my attention particularly called to it."

Edward C. Moore, a member of the firm of Tiffany & Co., a designer:

"There is a substantial difference between the patterns, but the design of all is so nearly alike that ordinary purchasers would be led to mistake the one for the other. It seems to me that is what the patent of White is made for."

Newell Mason, carrying on jewelry business in Chicago and Milwaukee for twenty years at least:

"The patterns are substantially different, but ordinary purchasers, seeing them apart, would mistake one for the other. If the cottage pattern had acquired popularity in the market, White's would derive advantage from that fact."

John Gleave, a die-sinker:

"Ordinary purchasers would be misled by the similarity between the cottage pattern and White's of 1867, *but not on a second comparison*. If an ordinary purchaser had not a sample of the cottage pattern before him, he would be apt to consider White's of 1867 to be the same with it."

James Whitehouse, a designer in the employ of Tiffany & Co.:

"From my knowledge and experience in the business, I do not regard the designs of White as original, and think that they were suggested by the design of Gorham & Co."

Morse, another of Tiffany & Co.'s designers:

"From my experience as a designer I should think that the designer of White's must have intended to imitate the effect in spirit of the previous design, and yet make a difference. If spoons and forks made after the cottage pattern had obtained a reputation and

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position in the trade, spoons and forks of White's pattern would find sale by reason of the popularity of the forks and spoons just mentioned. I should think they would be sold for the same thing."

Mr. Henry B. Renwick, aged 52, residing in New York, whose principal occupation was the examination of machinery, inventions, and patents, and who during the last sixteen or seventeen years had frequently been examined as expert in the courts of the United States for various circuits:

"I have examined the spoons and forks made by White, and I have no doubt that they are in all respects substantially identical with the Gorham design. Respecting the design secured by White's patent of 1868, I have some little doubt, owing to the increased concavity of outline in the broad part or head of the handle; but still think the better opinion is that it is within the description and drawing of the Gorham patent.

"By the expressions 'substantially' like, I mean such an identity as would deceive me when going as a purchaser to ask for one spoon, if I should be shown another which was slightly different in minute points either of contour or ornamentation. In the present instance, if I had been shown the cottage patterns, at one end of a counter, and afterwards had been shown White's pattern of 1867, at the other end of the same counter, I should have taken both sets of exhibits to have been of the same design, and I did, in fact, take them so to be until I laid them side by side and compared them minutely.

"I do not think that every change either in contour or in ornamentation makes a substantial difference in the design. For instance, take one of Rogers's statuettes of soldiers,* and I do not think the design would be substantially changed so as to evade his patent by substituting a rifle for a musket, or by taking the bayonet off the musket, supposing one existed in the design, or by changing boots for shoes, or *vice versa*. Or in the case of one of his soldiers drinking, by substituting a round tub for a square trough, or a glass for a tin cup. In a design for a carpet I should think the design was substantially preserved if the main features of the figure were unaltered, and the minor portion were changed by such changes as the substitution of a ring of flowers for a ring of stars, or quatrefoil for a trefoil ornament, and other such changes. In the present instance, the contours of the plaintiff's articles and

*These were small casts, very popular at the time, from models by Mr. John Rogers, of military figures and scenes during the late rebellion.—*R.E.P.*

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the articles manufactured by the defendant are not only substantially but almost identically the same. The Gorham articles and the articles manufactured by White all have a threaded or reeded pattern round the edges, all have a slight knob or boss at the point where there are small shoulders marking the dividing line between the stem and head of the handle, and all have knobbed ornaments near the extreme end of the handle and adjacent to the pointed projection which, in all of them, forms that end. There are, no doubt, minor differences; for instance, the Gorham spoon has two threads along the shank where the defendant's have only one, but that one is of nearly equal width with the two and gives the same effect. In the Gorham the knobbed ornament at the shoulders is connected with the outer thread, while in White's it is connected with the inner thread; but these knobbed ornaments in both are in the same place and have the same general effect; it requiring a very minute examination and actual comparison of the spoons side by side, as I am now making, to perceive and describe the distinction. In the Gorham spoons the knobbed ornaments on the inner reed are at the head of the spoon turned upwards and outwards. In White's they are turned downwards and inwards, and the reed is flattened out, but the substantial shape or contour at the end of the spoon, and the ornamentation thereof, by raised ornaments, partly connected and partly unconnected with the threading, is substantially the same in both. Now, I conceive the Gorham patent to be for a design, one element of which is the contour or shape of the handle, and the other the ornamentation thereof. The shapes of all the exhibits, as I have before stated, except that made under White's patent of 1868, are identical, and regarding it, as I have already stated, I think the better opinion is that it is within the line of substantial identity. It might deceive me, I think, in going from one store to another, but not if shown me in the same shop where I had just examined one of the Gorham spoons. With regard to the ornamentation, the substantial characteristics of the design described in the patent are that there shall be a threaded pattern around the edges of the handle, with a small knobbed ornamentation at the shoulders, as before stated; and also at the head of the handle, where it is finished by a pointed projection. I have already said that I find these substantial characteristics in White's spoons, and as I hold the views with regard to substantial identity and design which I have endeavored to express, I therefore state, as before, that the manufactures of White's are, without doubt, in my mind, substantially identical with the Gorham design, and that the better opinion is that the design in

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White's patent of 1868 is in the same category, although altered in degree of concavity at the head of the handle, as I have before stated."

On the part of the defendant an equal number of witnesses were produced, including Henry Ball, the senior member of the well-known firm of Ball, Black & Co., New York city, a silversmith and jeweller, who had been in this business since 1832, and numerous other persons, die-sinkers, engravers, editors of scientific publications, persons engaged in the inspection of designs, solicitors of patents, &c. All these testified, one after the other, and pretty nearly in the same words, that the designs were "substantially different;" one witness that they were "substantially different, both in shape and design." Mr. *Edward S. Renwick*, especially, an expert, whose reputation for competency is well known, swore positively that the designs represented by all of the White's manufactures were substantially different from the Gorham design, and stated in detail the items of difference; as thus:

"In the Gorham design the stem of the handle, between the shoulders and the bowl, has a second thread upon it, which is parallel with and inside of the boundary thread. No such second thread is found in White's.

He pointed out fifteen differences of this mechanical kind between the Gorham design and White's, patented in 1867, and sixteen differences between the Gorham design and that of White patented in 1868.

The court below considered that there was no infringement. It said:

"The question to be determined is, whether the designs of the White patents are or are not substantially the same as the design of the plaintiffs' patent. Each design may properly be considered as composed of two elements, the outline which the handle presents to the eye when its broader face is looked at, and the ornamentation on such face. If the plaintiffs' design be compared with the White design of 1867, a general resemblance is found between such outlines in the two designs. In other words, if the ornamentation on the handle in the plaintiffs' design formed no part of such design, and such design were confined to the form of the outline before mentioned, it would be difficult to say that the plaintiffs' design and the White design of 1867 were not substantially identical. But the moment the ornamentations on the faces of the two handles come to be considered, striking differences appear be-

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tween the plaintiffs' design and the White design. In the former, the outer thread is broken at the end of the handle, at the shoulders, and at the junction of the handle with the bowl; while, in the latter, such thread is continuous around the entire handle, from the junction of the stem with the bowl or fork back to the same point, it having there the form of a Gothic arch. In the former, the outer thread is, at the shoulders, turned inward to form rosettes, which present the appearance of two parts twisted together; while, in the latter, the outer thread is continuous. In the former, there is, on the stem of the handle, on each side, extending from the shoulders to the bowl or fork, an inner thread parallel with and inside of the outer thread; while, in the latter, there is no such inner thread. In the former, the inner threads on the enlarged end of the handle turned outward from each other towards the end of the handle, so as to form diverging scrolls; while, in the latter, such inner threads, as they approach the end of the handle, turn inwards and form re-entering scrolls. In the former, the scrolls of the inner threads form, at the end of the handle, a part of the outline boundary of the handle; while, in the latter, such scrolls are entirely inside of such outline boundary. In the former, the end of the handle is formed by a tip inserted between the two diverging scrolls into which the inner threads are formed; while, in the latter, the continuous outer thread forms such extreme end. In the latter, a figure in the form of a shield is inserted between the scrolls into which the inner threads are formed and the outer thread; while, in the former, no such figure is found, and no place exists where it could be inserted. In the latter, there is, on each side, a third and short thread, extending from the said scroll to the widest part of the handle; while no such thread is found in the former. In the former, the inner thread on the enlarged end of the handle abuts, at the shoulder next the stem, against the scroll or rosette into which the outer thread is there formed, and looks as if it were a continuation of the outer thread on the stem passed under the said scroll; while, in the latter, the inner thread on the enlarged end of the handle is, at the shoulders, turned into a scroll or rosette, and has no appearance of being a continuation of the outer thread in the stem. In the former, the inner threads on the stem unite in a swell or boss near the bowl or fork; while no such swell or boss is found in the latter. It is also to be noted, that, in the former, the outline at the end of the enlarged end of the handle has the form of a portion of a trefoil; while, in the latter, it has the form of a Gothic arch; and that, in the former, the surface of the enlarged end between the threads is swelled between

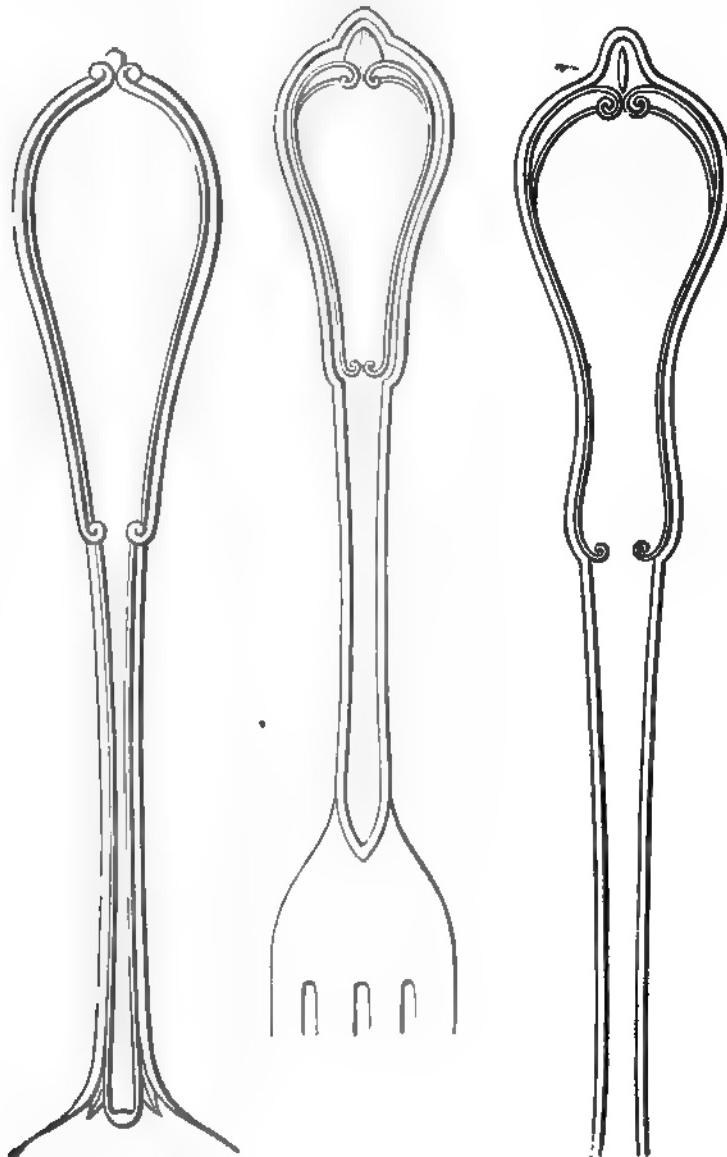
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the shoulders, and such swell is gradually flattened towards the widest part of the handle, so that the swell at such part is substantially different in appearance from the swell at the shoulders;

GORHAM Co.

WHITE, 1867.

WHITE, 1868.



while, in the latter, the swell is substantially the same from the shoulders to the broadest part of the enlarged end.

"The differences thus observed between the plaintiff's design

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and the White design of 1867, exist also between the plaintiff's design and the White design of 1868. In addition, in the plaintiff's design, the contour of the enlarged end of the handle spreads outward progressively from the shoulders until the widest part of the handle is reached; while, in the White design of 1868, the sides of the enlarged end turn inward for a distance after leaving the shoulder and then spread outwards to the widest part.

From the comparisons thus instituted, it appears that the plaintiff's design and the White design of 1867, are, in what has been called outline, very much alike, while they differ from each other in a marked manner in what has been called ornamentation, while the plaintiff's design and the White design of 1868 differ from each other in a marked manner, both in outline and in ornamentation; and that the two White designs differ from each other in outline in a marked manner, while they scarcely differ at all from each other in ornamentation.

"There can be no doubt, in the proofs, that the plaintiff's design is a very meritorious and salable one. The entire strength of their case, on the question of infringement, is put on the claimed ground, that the resemblance between their design and each of the two designs of White is such as to mislead ordinary purchasers and casual observers, and to induce them to mistake the one design for the other. It is argued that the merit of a design appeals solely to the eye, and that if the eye of an ordinary observer cannot distinguish between two designs, they must in law be substantially alike. In the present case, it is asserted that the eye of the ordinary observer is and will be deceived when looking at a handle of the plaintiff's design and a handle of either of the designs of White, because, in addition to the resemblance in contours, the handles have all of them a threaded pattern around the edges, and small knobbed ornamentations at the shoulders, and small knobbed ornamentations near the end, and a pointed projection at the end, and that the general effect on the eye of the ordinary observer is not and will not be modified by the differences which have been pointed out.

"It is impossible to assent to the view, that the test in regard to a patent for a design is the eye of an ordinary observer. The first question that would arise, if such a test were to be admitted, would be, as to what is meant by 'an ordinary observer,' and how he is to exercise his observation. One of the witnesses for the plaintiffs (John Gleave, *supra*, p. 396) testifies that the plaintiff's design and the White design of 1867 are sufficiently alike to mislead ordinary purchasers as to their identity, but not on a second examination;

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and that if an ordinary purchaser did not have before him a sample of the plaintiffs' design, he would be apt to consider the White design of 1867 to be the same pattern as the plaintiffs' design. Another of the witnesses (J. T. Bailey, *supra*, p. 395) for the plaintiffs states that he does not think that an ordinary observer would notice any difference between the two designs on a casual observation. The expert (Henry B. Renwick, *supra*, p. 397) examined for the plaintiffs testifies that, in saying that the White designs are substantially identical with the plaintiffs' designs, he means such an identity as would deceive him when going as a purchaser to ask for one spoon and being shown another; and that when he saw articles of the plaintiffs' design and of the White design of 1867, separately, he took them to be of the same design, until he laid them side by side and compared them minutely.

"The same principles which govern in determining the question of infringement in respect to a patent for an invention connected with the operation of machinery, must govern in determining the question of infringement in respect to a patent for a design. A design for a configuration of an article of manufacture is embraced within the statute as a patentable design, as well as a design for an ornament to be placed on an article of manufacture. The object of the former may solely be increased utility, while the object of the latter may solely be increased gratification to a cultivated taste addressed through the eye. It would be as reasonable to say that equal utility should be the test of infringement in the first case, as to say that equal appreciation by the eye should be the test of infringement in the latter case. There must be a uniform test, and that test can only be, as in the case of a patent in respect to machinery, substantial identity, not in view of the observation of a person whose observation is worthless, because it is casual, heedless, and unintelligent, and who sees one of the articles in question at one time and place and the other of such articles at another time and place, but in view of the observation of a person versed in the business of designs in the particular trade in question—of a person engaged in the manufacture or sale of articles containing such designs—of a person accustomed to compare such designs one with another, and who sees and examines the articles containing them side by side. The question is not whether one design will be mistaken for another by a person who examines the two so carelessly as to be sure to be deceived, but whether the two designs can be said to be substantially the same when examined intelligently side by side. There must be such a comparison of the features which make up the two designs. As against an existing

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patented design, a patent for another design cannot be withheld because, to a casual observer, the general appearance of the latter design is so like that of the earlier one as to lead him, without proper attention, to mistake the one for the other. The same test must be applied on the question of infringement.

"Applying these principles to the evidence in this case, and comparing the designs of White with the plaintiffs' design, it is satisfactorily shown, by the clear weight of testimony, that the designs of White are not substantially the same as the plaintiffs' design. The strength of the testimony of the witnesses on the part of the plaintiffs themselves leads to this conclusion. The substance of the evidence of the most intelligent of them, persons in the trade, is merely to the effect that the White designs are not substantially the same as the plaintiffs' design, but were intended to appear to be the same to an ordinary purchaser, and will so appear to him, but that a person in the trade will not be deceived, by the resemblance, into purchasing an article of the one design for an article of the other.

"A patent for a design, like a patent for an improvement in machinery, must be for the means of producing a certain result or appearance, and not for the result or appearance itself. The plaintiffs' patent is for their described means of producing a certain appearance in the completed handle. Even if the same appearance is produced by another design, if the means used in such other design to produce the appearance are substantially different from the means used in the prior-patented design to produce such appearance, the latter design is not an infringement of the patented one. It is quite clear, on a consideration of the points of difference before enumerated, between the plaintiffs' design and the designs of White, that each of the latter is substantially different from the former in the means it employs to produce the appearance it presents. Such is the undoubted weight of the evidence, and such is the judgment of the court."

The Circuit Court accordingly decreed a dismissal of the bill, and from that decree the Gorham Company brought the case here, where, after an elaborate and interesting argument by *Messrs. C. M. Keller and C. F. Blake, for the appellants, and Messrs. G. Gifford and W. C. Witter, contra*—

Mr. Justice STRONG delivered the opinion of the court.

The sole question is one of fact. Has there been an infringement? Are the designs used by the defendant substantially the same as that owned by the complainants? To answer these ques-

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tions correctly, it is indispensable to understand what constitutes identity of design, and what amounts to infringement?

The acts of Congress which authorize the grant of patents for designs were plainly intended to give encouragement to the decorative arts. They contemplate not so much utility as appearance, and that, not an abstract impression, or picture, but an aspect given to those objects mentioned in the acts. It is a new and original design for a manufacture, whether of metal or other material; a new and original design for a bust, statue, *bas relief*, or composition in *alto* or *basso relieveo*; a new or original impression or ornament to be placed on any article of manufacture; a new and original design for the printing of woolen, silk, cotton, or other fabrics; a new and useful pattern, print, or picture, to be either worked into, or on, any article of manufacture; or a new and original shape or configuration of any article of manufacture—it is one or all of these that the law has in view. And the thing invented or produced, for which a patent is given, is that which gives a peculiar or distinctive appearance to the manufacture, or article to which it may be applied, or to which it gives form. The law manifestly contemplates that giving certain new and original appearances to a manufactured article may enhance its salable value, may enlarge the demand for it, and may be a meritorious service to the public. It therefore proposes to secure for a limited time to the ingenious producer of those appearances the advantages flowing from them. Manifestly the mode in which those appearances are produced has very little, if anything, to do with giving increased salability to the article. It is the appearance itself which attracts attention and calls out favor or dislike. It is the appearance itself, therefore, no matter by what agency caused, that constitutes mainly, if not entirely, the contribution to the public which the law deems worthy of recompense. The appearance may be the result of peculiarity of configuration, or of ornament alone, or of both conjointly, but, in whatever way produced, it is the new thing or product, which the patent law regards. To speak of the invention as a combination or process, or to treat it as such, is to overlook its peculiarities. As the acts of Congress embrace only designs applied, or to be applied, they must refer to finished products of invention rather than to the process of finishing them, or to the agencies by which they are developed. A patent for a product is a distinct thing from a patent for the elements entering into it, or for the ingredients of which it is composed, or for the combination that causes it. We do not say that in determining whether two designs are substantially the same, differences in the

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lines, the configuration, or the modes by which the aspects they exhibit are not to be considered ; but we think the controlling consideration is the resultant effect. Such was the opinion of Lord Chancellor Hatherly in *McCrea v. Holdsworth*, 6 Chancery Appeal Cases, Law Reports, 418. That was a suit to restrain an infringement of a design for ornamenting a woven fabric. The defense was a denial that the design used by the defendants was the same as that to which the plaintiff was entitled. The ornament on both was, in part, a star, but on one it was turned in an opposite direction from that in the other ; yet the effect of the ornament was the same to the eye. The Lord Chancellor held the important inquiry was whether there was any difference in the effect of the designs, not whether there were differences in the details of ornament. "If," said he, "the designs are used in exactly the same manner, and have the same effect, or nearly the same effect, then, of course, the shifting, or turning round of a star, as in this particular case, cannot be allowed to protect the defendants from the consequences of the piracy." This seems most reasonable, for, as we have said, it is the effect upon the eye which adds value to articles of trade or commerce. So in *Holdsworth v. McCrea*, 2 Appeal Cases, House of Lords, 388, Lord Westbury said, "Now, in the case of those things in which the merit of the invention lies in the drawing, or in forms that can be copied, the appeal is to the eye, and the eye alone is the judge of the identity of the two things. Whether, therefore, there be piracy or not is referred to an unerring judge, namely, the eye, which takes the one figure and the other figure, and ascertains whether they are or are not the same." This was said in a case where there was nothing but a drawing of the design.

We are now prepared to inquire what is the true test of identity of design. Plainly, it must be sameness of appearance, and mere difference of lines in the drawing or sketch, a greater or smaller number of lines, or slight variances in configuration, if sufficient to change the effect upon the eye, will not destroy the substantial identity. An engraving which has many lines may present to the eye the same picture, and to the mind the same idea or conception as another with much fewer lines. The design, however, would be the same. So a pattern for a carpet or a print may be made up of wreaths of flowers arranged in a particular manner. Another carpet may have similar wreaths, arranged in a like manner, so that none but very acute observers could detect a difference. Yet in the wreaths upon one there may be fewer flowers, and the wreaths may be placed at wider distances from each other. Surely in such a case

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the designs are alike. The same conception was in the mind of the designer, and to that conception he gave expression.

If, then, identity of appearance, or (as expressed in *McCrea v. Holdsworth*) sameness of effect upon the eye, is the main test of substantial identity of design, the only remaining question upon this part of the case is, whether it is essential that the appearance should be the same to the eye of an expert. The court below was of opinion that the test of a patent for a design is not the eye of an ordinary observer. The learned judge thought there could be no infringement unless there was "substantial identity" "in view of the observation of a person versed in designs in the particular trade in question—of a person engaged in the manufacture or sale of articles containing such designs—of a person accustomed to compare such designs one with another, and who sees and examines the articles containing them side by side." There must, he thought, be a comparison of the features which make up the two designs. With this we cannot concur. Such a test would destroy all the protection which the act of Congress intended to give. There never could be piracy of a patented design, for human ingenuity has never yet produced a design, in all its details, exactly like another, so like that an expert could not distinguish them. No counterfeit bank note is so identical in appearance with the true that an experienced artist cannot discern a difference. It is said an engraver distinguishes impressions made by the same plate. Experts, therefore, are not the persons to be deceived. Much less than that which would be substantial identity in their eyes would be undistinguishable in the eyes of men generally, of observers of ordinary acuteness, bringing to the examination of the article upon which the design has been placed that degree of observation which men of ordinary intelligence give. It is persons of the latter class who are the principal purchasers of the articles to which designs have given novel appearances, and if they are misled, and induced to purchase what is not the article they supposed it to be, if, for example, they are led to purchase forks or spoons, deceived by an apparent resemblance into the belief that they bear the "cottage" design, and, therefore, are the production of the holders of the Gorham, Thurber, and Dexter patent, when in fact they are not, the patentees are injured, and that advantage of a market which the patent was granted to secure is destroyed. The purpose of the law must be effected if possible; but, plainly, it cannot be if, while the general appearance of the design is preserved, minor differences of detail in the manner in which the appearance is produced, observable by experts, but not noticed by ordinary observers, by

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those who buy and use, are sufficient to relieve an imitating design from condemnation as an infringement.

We hold, therefore, that if, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other.

Applying this rule to the facts of the present case, there is very little difficulty in coming to a satisfactory conclusion. The Gorham design, and the two designs sold by the defendant, which were patented to White, one in 1867, and the other in 1868, are alike the result of peculiarities of outline, or configuration, and of ornamentation. These make up whatever is distinctive in appearance, and of these, the outline or configuration is most impressive to the eye. Comparing the figure or outline of the plaintiffs' design with that of the White design of 1867, it is apparent there is no substantial difference. This is in the main conceded. Even the minor differences are so minute as to escape observation unless observation is stimulated by a suspicion that there may be diversity. And there are the same resemblances between the plaintiffs' design and the White design of 1868, and, with a single addition, the minor differences are the same. That additional one consists in this: At the upper part of the handle, immediately above the point where the broader part widens from the stem with a rounded shoulder, while the external lines of both designs are first concave, and then gradually become convex, the degree of concavity is greater in the White design. How much effect this variance has must be determined by the evidence. In all the designs, the ornament is, in part, a rounded moulding or bead along the edge with scrolls at the shoulders and near the top. There are, however, some diversities in this ornament, which are discoverable when attention is called to them. In the plaintiffs' the bead is interrupted at the shoulders and at the tip by the scrolls, while in both the designs of White it is continued unbroken around the scrolls. In the plaintiffs' the scrolls turn inward at the shoulders and outward at the tip. In the White design they turn inward both at the shoulders and at the upper end. But there are the same number of scrolls in all the designs, and they are similarly located, all having the appearance of rosettes. In all the external bead is formed by a depressed line running near the edge of the handle, but in the plaintiffs' there is an inner line, making a second very thin bead, nearly parallel to the external bead common to them all. In the White designs this inner line is wanting on the stem of the

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handle, though not on the broad part, but as the single line is wider it presents much the same appearance as it would present if divided into two. There are other small differences which it is needless to specify. What we have mentioned are the most prominent. No doubt to the eye of an expert they are all real. Still, though variances in the ornament are discoverable, the question remains, is the effect of the whole design substantially the same? Is the adornment in the White design used instrumentally to produce an appearance, a distinct device, or does it work the same result in the same way, and is it, therefore, a colorable evasion of the prior patent, amounting at most to a mere equivalent? In regard to this we have little doubt, in view of the evidence. Both the White designs we think are proved to be infringements of the Gorham patent. A large number of witnesses, familiar with designs, and most of them engaged in the trade, testify that, in their opinion, there is no substantial difference in the three designs, and that ordinary purchasers would be likely to mistake the White designs for the "cottage" (viz., that of the plaintiffs.) This opinion is repeated in many forms of expression, as, that they are the same pattern; that the essential features are the same; that seven out of ten customers who buy silverware would consider them the same; that manufacturers as well as customers would consider them the same; that the trade generally would so consider them; that, though there are differences, they would not be noticed without a critical examination; that they are one and the same pattern, &c., &c. This is the testimony of men who, if there were a substantial difference in the appearance, or in the effect, would most readily appreciate it. Some think the White designs were intended to imitate the other, and they all agree that they are so nearly identical that ordinary purchasers of silverware would mistake one for the other. On the other hand a large number of witnesses have testified on behalf of the defendant that the designs are substantially unlike, but when they attempt to define the dissimilarity they specify only the minor differences in the ornamentation, of which we have heretofore spoken. Not one of them denies that the appearance of the designs is substantially the same, or asserts that the effect upon the eye of an observer is different, or that ordinary purchasers, or even persons in the trade, would not be led by their similarity to mistake one for another. Their idea of what constitutes identity of design seems to be that it is the possibility of being struck from the same die, which of course, cannot be if there exists the slightest variation in a single line. They give little importance to configuration, and none to general aspect. Such evidence is not an answer

Syllabus.

to the complainants' case. It leaves undisputed the facts that whatever differences there may be between the plaintiffs' design and those of the defendant in details of ornament, they are still the same in general appearance and effect, so much alike that in the market and with purchasers they would pass for the same thing—so much alike that even persons in the trade would be in danger of being deceived.

Unless, therefore, the patent is to receive such a construction that the act of Congress will afford no protection to a designer against imitations of his invention, we must hold that the sale by the defendant of spoons and forks bearing the designs patented to White in 1867 and 1868 is an infringement of the complainants' rights.

DECREE REVERSED and the cause remitted with instructions to enter a decree in ACCORDANCE WITH THIS OPINION.

Justices MILLER, FIELD, and BRADLEY dissented.

MOWRY v. WHITNEY.

(14 Wallace, 620.)

1. Asa Whitney's patent of April 25th, 1848, for an "improvement in the process of manufacturing cast-iron railroad wheels," was for a process, not for a combination.
2. Where only vague and uncertain directions could be given as to the degree of foreign heat to be applied in any particular case, there, when a patentee in his specification, establishes a *maximum* and a *minimum*, the ascertainment of the proper intermediate degree may be left to the skill and judgment of the operator practicing the process.
3. It is as true of a process, invented as an improvement in a manufacture, as it is of an improvement in a machine, that an infringer is not liable to the extent of his entire profits in the manufacture.
4. In such a case the question to be determined is, what advantage did the infringer derive from using the invention, over what he had in using other processes then open to the public, and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits, and that advantage is the measure of profits to be accounted for.
5. When a patent is for an entire process made up of several constituent steps or stages, the patentee not pretending to be the inventor of those constituents, his claim to the process as an entirety does not secure to him the exclusive use of the constituents singly. What is secured is their use when arranged in the process.
6. The profits recoverable from an infringer are the measure of the patentee's damages, and though called *profits* are really *damages*; and unliquidated until a final decree is made.
7. Interest upon unliquidated damages is not generally allowable, and should not be allowed before a final decree for profits.

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APPEAL from the Circuit Court for the Southern District of Ohio; the suit being a bill by Whitney for an alleged infringement by Mowry of a patent which Whitney had for an improvement in the process of making wheels for rail-cars. The case was thus:

Wheels for rail-cars require to be made in a special way. The "tread" of the wheel, as it is commonly called—that is to say, the periphery—the surface which runs over the rail—must be very hard, or else it will wear out. On the other hand, the interior portions of the wheel, especially the hub, against which there is no friction, but on which there is great strain, need not be so hard, but must be very tough. Now here are requisites which by a law of the metal do not coexist in the same casting. Iron can be very hard only when it exists in a state of *laminated* crystallization, and then it is brittle. It can be very tough only when it exists in a state of *granulated* crystallization, and then it is soft. Now how is the "tread" to be made very hard and the interior very tough? This was the first problem in regard to iron car-wheels. And it was thus solved. It had been long observed that where molten iron was cooled *suddenly*, it came out solid in the laminated or hard and brittle form, but when cooled slowly it came out solid in the tough and softer form.

The problem, of course, then was to cool rapidly the part of the melted mass of iron which was to make the "tread" of the wheel, and to cool more slowly the rest which was to make the interior of the wheel—that is to say, the spokes and hub. To do this the moulds into which the molten iron was to be cast were made of sand, *surrounded by a circle of iron*; this circle called in the manufacturer's language a "chill." Iron being a rapid conductor of heat and sand a slow one, the part of the molten mass which came against the iron or chill—the part, in other words, of the molten mass which was to form the *tread*, was cooled rapidly, and came out in the laminated and *hard* (though brittle) form; while the parts of the wheel nearer to the hub, and especially the hub itself, (which is a very thick part of the wheel, and where a very great strain is put when the rail-car is in motion,) cooling slowly, the requisite toughness was obtained, through *this* part (and particularly the hub, owing to the greater mass of it) coming out in the granulated and *tough* (though soft) form. The cut, Fig. 1, which represents a piece fractured from off that part of the wheel including the flange, which runs over the rail, indicates the two forms. The lower part or chilled "tread" (which in the ordinary car-wheel itself is about half an inch deep) being distinguished by its laminated crystallizations and light gray color, and the upper

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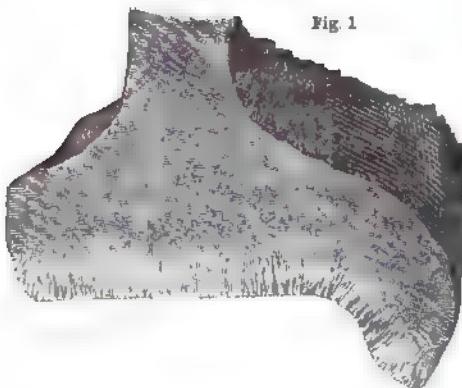


Fig. 1

part which runs in the direction of the hub by its granular crystallization, and a deeper gray line.

This problem, therefore—the problem of obtaining a hard tread, and a tough interior and hub—was solved. The thing desired was attained through the process of a sand mould with an iron “chill.”

But of this good result in one way, a very bad one in another was the consequence. The wheels had no strength. And here was the cause. A mass of iron in its molten state is larger than the same mass of iron when cold. Now here the molten iron was poured into the mould at the hub. Thence it flowed out through the sand mould of the spokes to the tread. There it came in contact with the chill, and as soon as it touched the chill it was cooled, crystallized, and reduced in volume almost instantly. The metal immediately behind it, on the contrary, being in contact with the sand, parted with its heat more slowly, and remained in a fluid or semifluid state much longer. Thus it happened that the periphery

Fig. 2.

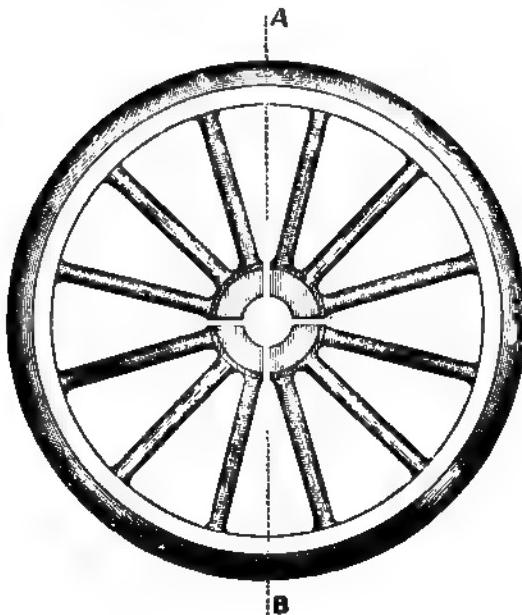


Fig. 3.



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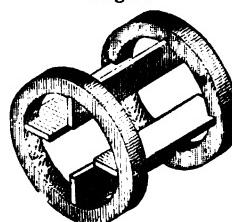
of the tread cooling and shrinking first, reduced its diameter, while the hub and spokes remaining in a fluid or soft state, presented little or no resistance to the contraction of the tread or rim. But as these spokes and hub subsequently parted with their heat, and passed into the solid state, an inherent strain began to be exerted between the rim and hub. The spokes were too short. Restoration of so much of their length as had been diminished by the prior cooling and shrinkage of the rim was demanded. All parts of the wheel having passed into the solid state, and become comparatively unelastic, the spokes were severed by mere tensile strain before the temperature of the whole mass was reduced to that of the atmosphere. And the same result followed when, instead of spokes, disks or plates were used on the sides of the wheel, as shown in Figure 3.

To obviate this effect, a rude practice was, on the one hand, to uncover and expose to the air the thick parts of the wheel, sometimes, in addition, pouring cold water on them; while, on the other, the thin portions would be covered with burning fuel or hot sand. Still, however, the wheel would always strain, and usually break.

The great matter now was to remove this difficulty. One plan was to divide the *hub* into sections, as shown in Figures 2 and 3, instead of casting it solid. This, of course, relieved the spokes from the tensile strain they were subjected to when connected with the solid hub; the spokes connected with each of the sections being left comparatively free to contract in length (only, however, it may be added) by carrying the section of hub to which they were attached with them.

To restore the requisite *strength* to the hub, the spaces between these sections would be subsequently filled with pieces of metal of the exact size of the spaces, and wrought-iron bands would be shrunk on to each end of the hub, so as to hold firmly together all the sections, and the metal fillings or plates between them. Figure 4 illustrates the metal fillings or plates and bands that would be put into and on the hubs.

Fig. 4.



Wheels of this description were used till 1840. At that date our roads began to be made more substantial, and higher velocities upon them being demanded, the cast *spoke-wheel*, thus filled out at the hub, began to show great defects. The expense of filling the spaces between the sections was considerable. There was difficulty

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in putting the wrought-iron bands on the ends of the hub and of boring out the divided hub so as to make it fit well on the axle and to secure it from becoming loose. Yet if these things were not effectually done, the wheel broke or changed its position on the axle, and the cars were thrown from the track.

To avoid these difficulties other means were employed to com-

Fig. 6. Fig. 6. A cross-sectional view of a wheel showing a solid hub and a rim. The hub has a central hole and two vertical slots. The rim is attached to the hub by a thin metal band. The entire wheel is shown in perspective.

pensate for the unequal cooling and shrinking of the parts. These were nearly all confined to making the hub solid, and connecting the hub and rim by a disk or plate, which was generally made double; two plates extending from hub to rim, in form convex, as in Fig. 5, or otherwise curved, so as to be susceptible, as was supposed, of contracting or expanding in diameter as much as would be required by the unequal cooling and contraction before noticed. In one of these forms the hub was also divided, as shown in Fig. 5, it being expected that with the shrinking of the outer disks it would about close up. These wheels, when skillfully made, were an improvement on the spoke-wheel, with the hub divided into sections, so far as safety was concerned, but they were still faulty.

What, in this obviously not yet perfect art of making cast-iron car-wheels, was wanted, was some way to make such wheels,

Fig. 6.



Fig. 7.



having a solid hub, and either *spokes*, or any desired form of *plates*, single or double, straight or curved, as represented in Figs. 6 and 7 below, and possessing all the requisites of durability and strength

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in the respective parts, and yet free from the defects which had attended, up to this time, all wheels yet made; and not requiring the expenditure of special labor upon the mould or pattern before casting, nor upon the finishing of the wheel for use, after it had been cast and cooled; some new and effective device which should eradicate and annihilate the difficulties which have been already imperfectly described, and which were still baffling manufacturers and inventors in this art. A new process of *prolonging* the time of cooling, in connection with annealing wheels would, if rightly conceived, secure the desired end.

It was in this state of the art and of its necessity that Whitney made a claim for what he called "a new and useful improvement in the process of manufacturing cast-iron railroad wheels," and on the 25th of April, 1848, obtained a patent for it, for fourteen years.

The specification in his patent was thus:

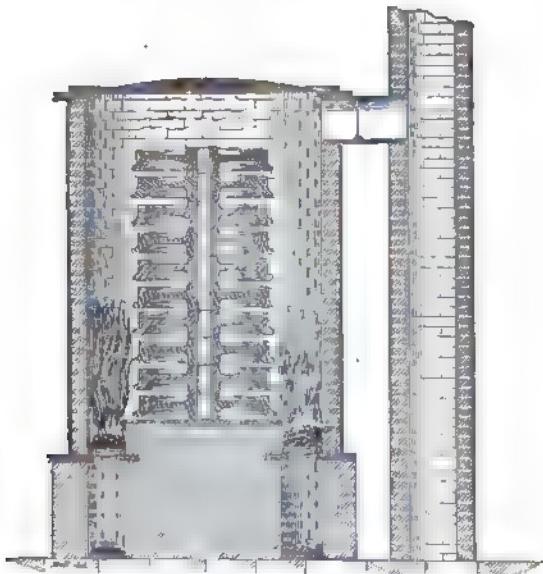
"My improvement consists in taking railroad wheels from the moulds in which they are ordinarily cast, as soon after being cast as they are sufficiently cool to be strong enough to move with safety, or before they have become so much cooled as to produce any considerable inherent strain between the thin and thick parts, and putting them in this state into a furnace or chamber that has been previously heated to a temperature as high as that of the wheels when taken from the moulds. As soon as they are deposited in this furnace or chamber, the opening through which they have been passed is closed, and the temperature of the furnace or chamber, and its contents, gradually raised to a point *a little below that at which fusion commences*, when all the avenues to and from the interior are closed, and the whole mass left to cool no faster than the heat it contains permeates through, and radiates from the exterior surface of the materials of which it is composed. By this process all parts of each wheel are raised to the same temperature, and the heat they contain can only pass off through the medium of the confined atmosphere that intervenes between them and the walls of the furnace or chamber; consequently, the thinnest and thickest parts cool and shrink simultaneously together, which relieves them from all inherent strain whatever when cold."

"The figure below represents a vertical cross-section of the FURNACE or CHAMBER, wherein is shown a pile of wheels as they are placed to be annealed. The cover of the furnace, being movable, is raised when the wheels are put in, and then closed and covered with earth, to prevent the too rapid escape of the heat. The damper in the flue leading to the chimney is also closed, after the wheels are put into the furnace, and the opening in the lower wall stopped by

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an iron plate banked with earth, which prevents the escape of the heat in that direction. There were other drawings and descriptions, not given by the reporter.

Fig. 8.



"To heat this furnace, I have used anthracite coal, it requiring less than one-fourth of a ton to anneal two tons of wheels. The heat required to perform the process may, however, be obtained by the use of any other fuel that may be less expensive at the place where the process is to be performed; or the requisite heat may be taken in a suitable conduit from the furnace in which the metal is melted from which the wheels are made, after it has performed that office, to the chamber in which the annealing process is to be performed. In either case, however, the furnace or chamber must be made of such form, and have such appendages connected with it, as to enable the operator to control the quantity and intensity of the heat used, by admitting more or less of it into the chamber, and of excluding it entirely.

"The advantages resulting from the process of prolonging the cooling and annealing, as above described, are that the wheels may be made much stronger, when made of the same weight, than they can be when cast and cooled in the ordinary manner; and railroad wheels, having any form of spokes or disks connecting the rim and hub, if subjected to this process, will not require their hubs to be cast in sections, and the spaces between the sections subsequently

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filled with some suitable metal, and wrought bands put on to the hub.

"Wheels subjected to this process of cooling and annealing will be stronger without bands on their hubs than those of the same weight cast and cooled in the ordinary way, having the wrought-iron bands on. In this way the original cost is diminished, and the wheels rendered more durable than they would be when made in any of the ways heretofore employed.

"I do not claim to be the inventor of annealing castings made of iron or other metal, when done in the ordinary way; nor do I claim to be the inventor of any particular form or kind of furnace, in which to perform the process. But what I do claim as my invention, and desire to secure by letters patent, is the process of prolonging the time of cooling, in connection with annealing railroad wheels, in the manner above described; that is to say, the taking them from the moulds in which they are cast, before they have become so much cooled as to produce such inherent strain on any part as to impair its ultimate strength, and immediately after being thus taken from the moulds, depositing them in a previously-heated furnace or chamber, so constructed, of such materials, and subject to such control that the temperature of all parts of the wheels deposited therein, may be raised to the same point, (*say a little below that at which fusion commences,*) when they are allowed to cool so fast, and no faster, than is necessary for every part of each wheel to cool and shrink simultaneously together, and no one part before another."*

Whitney being in possession of his patent as already described, one Mowry, of Ohio, conceived that he too had made a valuable improvement in the same branch as Whitney professed to have made one; and on the 7th of May, 1864, also obtained a patent. His specification, illustrated by a vertical cross-section of his furnace, says:

"My invention consists in the use of charcoal or other equivalent substance, interlaid with the wheels in the annealing pits, in connection with the regulated admission of air, for the purpose of

* It may here be stated that, on the 7th of August, 1849, there was granted to one Murphy a patent (extended subsequently for seven years from the 7th of August, 1863,) for a mode of cooling car-wheels, which consisted in encasing and protecting from the air all parts of the wheels except the hubs, and causing a current of cold air, by means of connection with the main chimney, to pass through the hubs, thus retarding the cooling of the plates and speeding the cooling of the hubs. This process, it will be observed, was the antithesis of Whitney's, the essence of which consisted in heating the wheels until all parts of them had attained the same degree of heat.

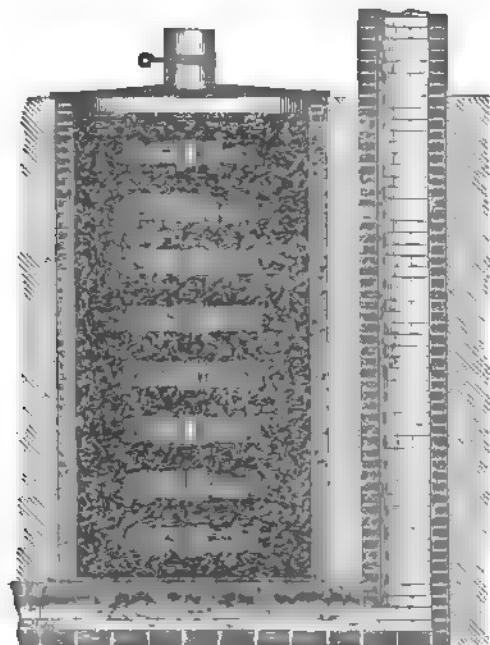
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heating the wheels up to a proper temperature, prolonging the heat, and permitting them to cool in the course of a given time, gradually, as will be more particularly explained below.

"The operation of my invention is as follows: A layer of charcoal having been laid on the perforated bottom of the annealing pit, the wheels, as they are turned out of the moulds red hot, are placed in the pits, with a layer of charcoal between each wheel, a layer of charcoal being laid on the uppermost wheel, and on this a perforated metal plate is laid.

"The charcoal, becoming now ignited by the hot wheels, the cover of pit is then laid on, and the damper opened so as to admit just sufficient air to effect the combustion of the contained charcoal, in the space of seventy-two hours, less or more, as may be found necessary for the annealing operation. The draft of air in the apparatus shown on drawings, is from above downward, but it may, without affecting my invention, be from below upwards, by conveying the air from the horizontal flue, up through the pits, and through the aperture in cover, and from thence through flues, into the main shaft or chimney *C*; the result will be the same in both cases, and the adoption of one or the other plan will be dictated by convenience."

Fig. 2.



Under his patent Mowry employed a process of annealing such

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as it described ; and Whitney thereupon filed a bill to enjoin him as an infringer. Mowry answered, denying infringement, alleging the invalidity of Whitney's patent for want of novelty and for want of utility,

"Inasmuch as the said process would ruin and destroy the hardness on the rim of the car-wheels, known as the 'chill,' and thus greatly detract from the usefulness and durability of the wheels."

A large amount of testimony being taken on both sides, the cause was brought to a final hearing on the pleadings and proofs, and all the issues being found for Whitney, the cause was referred to a master to take and state an account of the gains and profits which the defendant had derived from the infringement of Whitney's patent.

The master reported, on the 1st of August, 1868, that Mowry had made use of Whitney's patent in the manufacture of 19,819 wheels, and for the use of the process in making these wheels charged him :

Profits on these wheels.....	\$91,501 86
Interest on the said profits to 1st August, 1868.....	19,984 21

He further reported that Mowry, prior to the 1st of April, 1861, and without the use of the process complained of in this cause, had built up his business to its then condition. That the use of the process did not diminish, but did increase the cost of making the wheels manufactured by Mowry. That while Mowry used the said process, he did not make any difference in the quality of iron used for the manufacture of car-wheels, nor in the weight or form of car-wheels, nor by reason of the use of such process, in their price. That Mowry's business was apparently not increased by the use of the process ; and that he had sold the wheels he had since manufactured without the process complained of, as readily as those manufactured by use of the process, and at the same prices.

[The patentee himself, it should be here added, in 1862, when applying for an extension of his patent, had stated, under oath, that he believed there was no essential difference in the cost, per pound, of making cast iron chilled car-wheels of the various patterns, and by the different modes in use, provided the same skill and system controlled the manufacture ; that by his process he was enabled to make them lighter than those made in any other way for a similar service, and therefore could afford to sell them at the same price per wheel as other makers, and save the cost of the difference in weight ; that this saving of metal he deemed to measure the essential advantage he had over his competitors, and also the

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profits arising from his patent, and he estimated that *ten pounds per wheel would be a fair average of the metal saved by his process.*] [See *supra*, 383, *Mowry v. Whitney*.)

Mowry excepted to the charge made, as above stated by the master, of profit derived by the entire manufacture of the wheel, and the case was recommitted to the master with instructions to inquire:

1st. Whether the wheels made and sold by Mowry had, or could have any market value without being subjected to the process patented by Whitney.

2d. If they had or could have been made to have such value by any annealing or slow cooling process outside of the Whitney patent, how much additional value, if any, they derived from being subjected to that patented process?

To this the master returned that he was unable to report any division of profits; and, being uninformed as to what was covered by the patent, he reported that, if the entire process of reheating and prolonged cooling used by Mowry in the manufacture of the wheels was an infringement of the complainant's patent, the total profit realized by the defendant from the manufacture and sale of the wheels was due to the use by him of the complainant's invention.

He reported, secondly, that if there was no infringement of the complainant's patent, unless the wheels were subjected to the process of reheating, that is to say, if the process of slow cooling used in connection with reheating was old, and not a part of the complainant's invention, nor included in his patent, no part of the profits realized by the defendant from the manufacture and sale of the wheels was due to the use by him of the complainant's invention.

[This second finding of the master the court set aside, sustaining an exception to it, that not only the entire process described in the patent, but each part of such entire process was the invention of Whitney, and the use of any material, substantial, and essential part of such entire process—the slow cooling being a substantial and material part, whereby only an improved chilled cast-iron railroad wheel could be made, and beneficial effects the same in kind, if not in degree attained, that were attained by Whitney's entire process—was an infringement of Whitney's patent, and that the profits derived from the use of such material, substantial, and essential part should be accounted for in this case.]

But the master, in addition to the second finding thus, as just mentioned, set aside, further found that, had the wheels manufactured by the defendant been left to cool in the open air, they would

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have had no value as car-wheels, and have been worth only the value of the iron of which they were made; that reheating in connection with slow cooling, or slow cooling without reheating, was indispensable to make marketable cast-iron wheels of the configuration of those made by the defendant; that there was no reheating process for the manufacture of cast-iron car-wheels outside of the complainant's patent.

The master also found that the wheels could have been removed from the moulds and finished, without being subjected to the reheating process, or without any extraneous heat, and he specified two modes in which it might be done. Wheels so manufactured, he reported, have and did have, during all the time in which the defendant used the complainant's process, a market value equal to that of wheels manufactured by that process.

There were some other findings which may be briefly noticed:

1. That the 19,819 wheels were annealed wheels, and sold as such.
2. That if the complainant's patent included prolonging the time of cooling the wheels, as used by the defendant, the process conferred upon them their entire market value, above their weight in iron, but not so if the complainant's patent covered only the application of extraneous heat to the wheels after they are taken from the moulds.
3. That taking annealing to mean reheating in connection with slow cooling, no other process of annealing in connection with slow cooling than that patented to the complainant and that described in the patent of the defendant appeared to have been known.
4. That the wheels made by the defendant required no treatment other than that described in the complainant's patent to complete them as annealed wheels.
5. That still taking annealing to mean reheating in connection with slow cooling, the annealed wheels could not have been made by any process outside the complainant's patent.

Upon these findings the court below decreed against Mowry the entire profits made by him in the manufacture and sale of the wheels from beginning to end; the profits resulting from the reheating, and regulated slow cooling in connection, and those also which might have resulted from mixing and melting the iron, casting in moulds, making the chill, and from the possible advance on the iron above its cost, with \$10,980.22 additional interest on the whole, from the 1st of August, 1868, when the original reports were made, to August 1st, 1870; at which time the subject was finally heard.

Argument for Mowry.

The final decree thus stood :

Profits on 19,819 wheels.....	\$91,501 86
Interest to date of original report, (August 1, 1868,)	19,984 21
Interest on \$91,501.86, (from August 1, 1868, to August 1, 1870,).....	10,980 22
	<hr/>
	\$122,465 29

From this decree Mowry, the defendant, appealed.

Messrs. A. G. Thurman and C. B. Collier, for the appellant:

1. Whitney's patent is invalid for want of novelty, his process being, at most, simply the application of a well-known process to a purpose analogous to those purposes to which, long anterior to him, it had been applied.

The *Artist's Manual, &c.*, published by James Cutbush, Philadelphia, 1814, under the head of "Annealing," says :

"When a substance melted, or nearly in a state of fusion, is cooled very hastily, its texture is so much altered, that, if a ductile metal, it loses much of its malleability, and cannot be extended far under the hammer without cracking; or if a brittle metal, a glass or vitrescent mixture, it is liable to fly to pieces by a very slight temperature or external injury. To avoid this, the process of *annealing* is resorted to, which is nothing more than cooling the heated or melted substance as slowly or equally as possible, often in a separate furnace of the requisite heat, and sometimes called an annealing oven. The utility of annealing is shown very conspicuously in the manufacture of glass, the casting of speculum metal, or the heating of gold. By the process of annealing the glass is preserved for some time in a state *approaching to fluidity*. A similar process is now used for rendering kettles and other vessels of cast iron less brittle, which admits of the same explanation as that above stated."

So the *Philosophical Transactions* of 1840,* after describing experiments as to best alloy for speculum metal, &c., says:

"It was evident that the flaws of so frequent occurrence in the plates formerly cast, and also their extreme brittleness, arose from the contraction of the metal in some places more than others, just at the time of transition from the fluid to the solid state. *The edge of the plates* always became solid first, and the central portions, thus prevented from contracting, were *strained* when no longer ductile. When the metal has become solid in the ingate or hole

* Royal Society of London, 1840. Account of Experiments on the Reflecting Telescope. Lord Oxmantown.

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through which it enters the mould, the plate is to be removed quickly to an *oven heated a little below redness* to remain till cold, which, where the plates are nine inches diameter, should be three or four days at least."

The same thing, with a special reference to speculum metal, is treated of and declared in Holtzapfel's *Turning and Mechanical Manipulation*, London, 1843.

Now in view of such well-known writings, what *invention* was made by Mr. Whitney? The ultimate purpose of all that he describes is to relieve the wheels from inherent strain. Is not this the very purpose of the processes which the prior writers, whom we quote, also describe?

2. Whitney's patent is void because that which is described and claimed therein is not useful, inasmuch as it designates and provides for such degree of reheating, and none other ("a little below that at which fusion commences") as will destroy the chilled periphery, or tread, an essential feature to a useful car-wheel.

3. Mowry's process does not infringe Whitney's patent. In Mowry's process, while the charcoal may raise the temperature of the plates of the wheels to some extent, (*it being only applied to the plates,*) yet practically its effect is only to *retard* the cooling of the plates. The current of free air which is constantly passing through the *hubs* of the wheels accelerates the cooling of those parts, and the contiguity of the *rims* to the walls of the pits hastens their cooling.

The only language in Whitney's patent indicating the degree of heat required is a point "a little below that at which fusion commences." Now, should it be assumed that there is a reheating of the wheels, or any parts of them, in Mowry's process, it is impossible in the nature of things that with a current of cold air constantly passing through the hubs, the draft being caused by a connection with the main chimney, the wheels being placed one upon the other, so as that the hubs shall coincide with each other, the charcoal being confined to the plates, and the air for its combustion finding its way only between the horizontal faces of the hubs, the combustion taking place, as the patent says, in "72 hours, more or less"—it is incredible that any such reheating is, or could result in such a process as is contemplated in Whitney's patent.

4. *As to the matter of damages.* The manufacture of a cast-iron car-wheel is a succession of processes, consisting of, 1st. The mixing of the iron, having reference to the proper proportion of iron

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possessing the property of receiving a "chill." 2d. The melting, stirring, and pouring of the metal, having reference to the duration of the operation, and the *temperature* of the metal when poured. 3d. The formation of the wheel, having reference both to the *configuration* of the wheel and the character of the *mould* in which it is cast, the same being composed in part of iron and in part of sand. 4th. The removal of the wheel from the mould, having reference to temperature. 5th. The *prolongation of the cooling* of the wheel, having reference to uniformity of contraction and proper adjustment of its particles, so as to prevent inherent strains, and secure, as nearly as possible, the ultimate strength of the casting.

Whitney's *invention* does not extend to either of the above processes, but consists in engrafting upon the fifth process above—the slow cooling—the element of reheating. Mowry's infringement, if any, began when he added reheating to slow cooling, and ended when he ceased to reheat and resumed slow cooling. The use of the reheating element determining the *fact* of infringement, the inquiry is, what proportion of his aggregate profit was due to, or derived from, the use of such element; in other words, what advantage was gained from using that element over what he might have gained from using processes that he was unquestionably free to use, and which would have brought about as good a result. The profits, therefore, were found on quite a wrong principle.

Messrs. B. R. Curtis, E. W. Stoughton, and H. Baldwin, Jr., contra:

1. Annealing, of course, has long been known; but it is not pretended that a cast-iron car-wheel was ever before the date of Whitney's patent removed from its mould, placed in a heated chamber, and there subjected to a process of slow cooling, for the purpose of preventing inherent strains. It is moreover not denied that the process, as described by Whitney, will accomplish precisely what he states it will; that is to say, simultaneous cooling and shrinkage of all parts of the wheel, and relief from all inherent strain.

2. The specification is directed to persons skilled in casting car-wheels, and, of course, those having a chilled tread. This chill is complete so soon as the wheel is sufficiently cooled to be removed from the mould. This is not disputed; and the direction in the specification is, to take the wheel from its mould as soon after being cast as it can be removed with safety, or before it has become so much cooled as to produce any considerable inherent strain between the thin and thick parts. The inventor is here giving

Argument for Whitney.

instructions which cannot, from the nature of the subject, be so precise as to dispense with the practical knowledge and skill of the operator. All the inventor could do in his specification was to state in what condition the wheel should be when removed, leaving the operator to ascertain this.

3. The process employed by Mowry was a palpable infringement of Whitney's patent. Mowry usually removed his wheels from their moulds as soon as they were so hardened by cooling as to maintain their shape, and before they had been subjected to any considerable inherent strain. It is argued that as he placed the first wheel in a cold instead of a hot chamber, he thereby materially varied from the respondent's process; but it should be remembered that, before depositing this first wheel, there was placed in the bottom of the pit such a quantity of charcoal as the operator saw fit to use; and the moment the red-hot wheel was applied to this it ignited and commenced rapidly to heat the chamber, so that, when the second and third of the series of ten or twelve were placed therein, each red-hot wheel being accompanied by its quota of charcoal, each and all, after the first and second, were thus deposited not only within a hot chamber, but in a mass of flame fully capable of reheating the wheels to the condition they were in when taken from the moulds, and no doubt to a much higher temperature, depending, of course, very much on the quantity of charcoal employed.

4. *As to the damages.* The specification of Whitney's patent includes the entire process, and is not limited to the mere reheating of the car-wheels.

The master finds that defendant made a certain profit by using the patented process entire. Also, that if defendant had used only a part of the process, he might have made wheels which would have sold in the market at an equal profit. Does it affect the amount of profits to be recovered, that the defendant might have used another process, not patented, and thereby made as much profit? In other words, when a defendant has used the patent and the whole of it, as in this case, can he come in and say, "There was an outside process which I might have used as profitably?" The defendant is held as a trustee who has used another person's property, and only has to account for the profits actually made by this invasion. If a trustee uses trust funds in his own business and makes profit, he is held to account for it if the *cestui que trust* elects to have an account for them; they are his. It could be no answer by the trustee to say, "I could have borrowed money at six per cent., and made more profit than I have made by using

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your money.' Equity knows only what a trustee has *done*. It does not inquire what he *might have done* if he had not done what he did do.

Mr. Justice STRONG delivered the opinion of the court.

The defenses set up to the complainant's bill for an infringement are, that the patent is void for want of novelty in the invention, and for want of utility, and also that it has not been infringed by the defendant.

To determine how far these defenses are sustained it is important to have a clear apprehension of the state of the art when the patent was granted, and of the invention which it was intended to secure to the patentee. Prior to the 2d of August, 1847, cast-iron railroad wheels had been cast, and cast in chills, that is, they had been cast in sand moulds with an outer circumference of iron. The effect of this outer circumference was to produce a more rapid chill on the periphery of the wheel, thereby crystallizing and hardening it, so that the wheel was made stronger, and more capable of resisting the friction of the rails. But the parts of the wheel were of different thicknesses. The hub and the rim were much thicker than the plate which connected them, and of course they cooled after casting more slowly than the plate. The consequence of this unequal cooling was to produce a strain between the thick and thin parts that greatly impaired the strength of the wheel. Various devices had been made to guard against, or to remedy the mischief resulting from this inherent and inevitable strain, caused by unequal contraction in cooling. The most common of these, perhaps, was casting the wheel with the hub in sections, in order that the sections might accommodate themselves to the contraction of the plate. But this was expensive. It required the open space between the sections to be filled up with other metal, and generally it required the hub to be hooped. It is unnecessary, however, to describe these devices. It does not appear that in any of them the idea existed of making a car-wheel with chilled tread, strait plates, and solid hub, *annealed* and cooled so as to leave it uninjured by the strain attendant upon the unequal cooling of the thick and thin parts. Annealing some kinds of castings was known and practiced before 1847. This is abundantly proved by the witnesses, and various modes of annealing plain castings had been described by scientific writers both in this country and abroad, before that time. But there is no evidence that we have been able to discover that cast-iron car-wheels had ever been subjected to an *annealing* process, in connection with slow cooling, before the process was

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discovered or invented by Whitney. In all the experiments made for annealing other castings the object sought was different, and in them all, as well as in the process described in the publications given in evidence, the effect upon the annealed metal or glass was not to leave them in the condition in which it was sought to bring car-wheels, with the crystallization or chill of the periphery unimpaired, and the plate or thin part unaffected by strain. Cast-iron railroad wheels are castings of a peculiar kind. The methods of slow cooling, or of annealing and slow cooling, which were applied to other castings before 1847, were not adapted to their peculiarities, or to what they needed. They are not homogeneous throughout. They are of different thickness in their several parts, and hardened at the tread, while the plate and hub are not crystallized, but are soft and tough. These different qualities of the different parts it is necessary to preserve, and what was needed when Whitney's invention was made, was to preserve them, and at the same time relieve against any strain, caused by unequal cooling, which might impair the strength of the wheel.

If now we proceed to inquire what Whitney's alleged invention was, as described in his specification and claim, it will be seen that it was a process, not to make a car-wheel or to destroy any of the advantages which had already been secured, but to add another. Its avowed object was to obtain a new value, or rather exemption from imperfection. It was to remedy the evil of strain resulting from the more rapid cooling of one part of the wheel than the cooling of the other parts. And this was sought to be accomplished by a process that insured the cooling of all parts, both the thick and the thin, with equal slowness. The process consists of several parts. The first is taking the wheels from the moulds after the melted iron has been run into the moulds, before they become so much cooled as to produce strain on any part sufficient to impair their ultimate strength. The second is placing the wheels immediately after their removal in a furnace or chamber previously heated to about the temperature of the wheels when taken from the moulds, the heat in the furnace being subject to control. The third is applying heat until the temperature of all parts of the wheels shall again be raised to the same point, (indefinitely said to be a little below that at which fusion commences.) The fourth and last stage in the process is allowing the wheels after they have been thus reheated, to cool so fast as, and no faster than, is necessary for every part of each wheel to cool and shrink simultaneously together, and no one part before another. It is therefore a patent for a process, not for a combination. Neither as a whole nor in

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parts can it be considered without reference to the ultimate object in view, which was to retard cooling by a second application of heat supplied until all parts of the wheel are raised to the same temperature, and then permit the heat to subside so gradually that the cooling of the parts shall not only commence at the same point of temperature, higher than that where hurtful strain begins, but shall continue equable till all artificial heat ceases. The removal from the moulds to the furnace or chamber, the removal at the time described, before the incipient strain has become permanently hurtful, and to a place where more heat may be applied, and where the heat can be under control, are parts of the process to secure equable cooling during the time when cooling without such appliances is likely to produce strain and consequent weakness. It is apparent that this is more than a process for *annealing*. That is included, it is true, but it is only a small part. It is applying foreign heat to a hot chilled wheel, at the point of time when it has reached a particular stage of cooling, by means of such foreign heat bringing the whole casting up to a higher and uniform temperature, and maintaining an equable abatement of heat in a furnace or chamber under the control of the operator. We have sought in vain through the proofs submitted in this case, for any satisfactory evidence that this process was known before 1847, when Whitney commenced it, or that anything equivalent to the process was known. Certainly nothing of the kind had ever been applied to cast-iron railroad wheels, and, as we have seen, they are castings of a peculiar character, not admitting of the treatment that may be applied to other castings. What they needed was (what was substantially described by one of the witnesses) the discovery of the fact that the chilled cast iron, constituting one part of the wheel, could be subjected to heat less than that which would cause fusion, without producing any material effect upon its hardness, while the cooling of other parts of the wheel could be so prolonged by applying that heat externally, as to enable all parts to cool without being subjected to the strain attendant on unequal contraction, and, in addition to the discovery, they needed the invention of a process by which it could be practically carried out. Such a discovery and such a process were needed for no other castings. The novelty of the patentee's invention is not therefore disproved by evidence that glass, or speculum metal, or even other iron castings had been annealed and slow-cooled, prior to the time when it was made. Of this there is very considerable evidence both in the testimony of witnesses and printed publications. The specification disclaims invention of annealing iron castings done in the ordinary

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mode. It claims annealing when applied to cast-iron railroad wheels, in the mode or by the process described. It is not therefore merely an old contrivance or process applied to a new object, a case of double use. A new and previously unknown result is obtained, namely, the relief of the plate of the wheels from inherent strain without impairing the chilled tread, a result which, though anxiously sought, had not been obtained before Whitney's invention. We are therefore of opinion that the defense set up that the patent was void for want of novelty of invention is unsupported.

The validity of the invention is next assailed for the reason that the process described in it, and claimed, is denied to be useful, because it would destroy the hardness of the rim, or tread of the car-wheel known as the chill, and thus greatly detract from the durability and usefulness of the wheels.

It is undoubtedly true that a chilled periphery or tread is essential to the usefulness of a car-wheel. Indeed, the evidence is, that whenever car-wheels are spoken of, wheels with chilled tread are meant, and any process which destroys the chill must render them valueless for the purposes for which they are needed.

It is also true that the fusing point of cast iron is in the neighborhood of 2,786 degrees of Fahrenheit, twelve or fifteen hundred degrees above the point at which, according to the evidence, the chill of the tread of a car-wheel would be destroyed. If, therefore, the process patented to Whitney, requires, after the removal of the wheel to the heated furnace or chamber, the application of a degree of heat closely approximating the point of fusion, it must be conceded that instead of being beneficial it is positively hurtful. And this is what is contended by the appellant. The objection seems to be aimed at the sufficiency of the description of the patentee's invention, which it is abundantly proved he practiced successfully through many years, rather than at its utility. Whitney conceived a process and practiced it. That process may have been a highly useful invention, and therefore patentable, and yet he may have failed so to describe it as to teach the public how to practice it. The law requires every inventor, before he can receive a patent, to furnish a specification or a written description of his invention or discovery, and of the manner and process of making, constructing, using, and compounding the same, in such full, clear, and exact terms, avoiding unnecessary prolixity, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same. The specification, then, is to be addressed to

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those skilled in the art, and is to be comprehensible by them. It may be sufficient, though the unskilled may not be able to gather from it how to use the invention. And it is evident that the definiteness of a specification must vary with the nature of its subject. Addressed as it is to those skilled in the art, it may leave something to their skill in applying the invention, but it should not mislead them. The objection here is that in describing the degree of heat to be applied after the wheels have been deposited in the heated chamber the patentee states it to be such that the temperature of all parts of the wheels "may be raised to the same point, (say a little below that at which fusion commences,'') and the defendant insists that this amounts to a direction to raise the heat to a degree that must destroy the chill of the tread, and thus render the casting valueless as a railroad car-wheel. But it is obvious that only vague and uncertain directions could have been given respecting the extent to which the heat is necessary to be raised. It must differ with the difference in the progress of cooling which has taken place before the wheels are removed from the moulds. The process requires this removal before they have become so much cooled as to produce such inherent strain on any part as to impair its ultimate strength. Precisely when such a strain begins cannot be known. Cooling commences the instant the casting is made, and with cooling commences contraction, and strain must soon follow. Plainly it is impossible to describe the point of time when the strain has proceeded so far as to impair the ultimate strength of any part of the wheel. That, in the nature of things, must be left to the judgment of the operator. But before that time the strain may be checked, and this is what is contemplated by raising the temperature of all parts of the wheel to the same point or degree. The moment that is done the strain ceases, and the primary object of the patentee's process is accomplished. The state of things is reproduced which existed before the contraction and attendant strain began, when the slow cooling is allowed to follow in an atmosphere so heated and regulated that each part of the wheel loses its heat at an equal pace with all others.

Now, any one skilled in making cast-iron railroad car-wheels in view of this specification must see that the object of the process is to relieve from and guard against hurtful strain, without destroying the chill, and that heat is applied only for that purpose. It requires no particular science or skill to enable an operator to perceive that the moment all parts of the wheel are raised from a point above where serious strain begins, and where yet the thick

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and thin parts are in different stages of cooling, to a stage where the degree of temperature of all parts is the same, and above the degree where serious strains commenced, the thing sought has been attained. Then the avowed purpose of the inventor has been accomplished. It would be most unreasonable to read the directions of the specification without reference to the object which they profess to have in view. The evidence is that the chill is formed while the casting is in the mould, and that the hurtful strains commence after the formation of the chill. Indeed, it is manifest there can be no strain until the chill is complete. It must be, therefore, that all the heat which is needed to relieve from the strain is that which suffices to raise the temperature of the thin part, or plate, to the degree at which the strain commenced—a lower temperature than that which existed when the chill was formed. Hence an operator, in following the directions of the specification, would be taught by his practical knowledge that the instant all parts of the wheel had been heated to that temperature no more heat was needed.

And we do not think it a fair construction of the patentee's language to hold that it requires the heat to be raised in all cases to a degree only a little below the point of fusion. He does not attempt to give any more definite direction than that all parts of the wheel must be raised to the same temperature, suggesting in a parenthesis ("say, a little below that at which fusion commences.") He fixes a *maximum*. The heat must not reach the point of fusion, and the prescribed *minimum* is that degree where the heat of the different parts of the wheel is equal. Within those limits the degree is left to the judgment of the operator, and within those limits it is clear from the evidence that the process may be applied without injury to the chill. The proof is that it has been successfully applied in the manufacture of a vast number of wheels, and that failure has been very rare.

There are some witnesses who have testified that the Whitney process, as they understand it, would destroy the chill of the wheel. But they explain their understanding to be that the wheels are to be reheated to a degree far beyond what is required to relieve from strain, and thus heated for no purpose. They keep in sight the *maximum* limit, and approach near to that, overlooking entirely the *minimum*, and disregarding the single object of the process, namely, relief of the plate, or thin part of the wheel, from the strain caused by unequal contraction.

We are, therefore, of opinion that the patent is not void for want of utility, and that the specification sufficiently describes the process invented and claimed.

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The remaining defense is a denial that the process conducted by the defendant is an infringement of Whitney's patent.

What the process of the defendant was is clearly set out in a patent which he obtained on the 7th of May, 1861. It consists in placing in a pit the wheels as they are turned out of the moulds red hot, with a layer of charcoal beneath the lowest wheel, and a layer between each wheel as well as above the uppermost, and covering the pit with a perforated metal plate. The charcoal is ignited by the hot wheels, and just sufficient air is admitted to effect combustion of the coal. Thus the wheels are reheated and permitted gradually to cool. There are some minor details which it is unnecessary to mention. So far as relates to reheating the wheels and retarding the cooling by the application of additional heat, it is obvious that the process is substantially the same as that covered by the complainant's patent. The object is the same, and the mode of attaining it is in substance the same. The purpose of the charcoal interlaid with the wheels is avowed to be to heat them in the pit to a proper temperature, prolonging the heat and permitting them to cool gradually in a given time, said to be seventy-two hours, more or less, as may be found necessary for the annealing operation. The rapidity of combustion of the charcoal is regulated by a damper in the flue. And this process is followed, as the specification explains, that the different parts of the wheels may adjust themselves to each other, and accommodate the unequal contraction which results from the process of chilling. It is under this patent, and in accordance with its directions, that the defendant has prepared his car-wheels for market. As the object of the patentees is the same, relief from the strain incident to unequal contraction, the only inquiry is whether the object is attained by substantially the same means. The idea of Whitney was undoubtedly arresting contraction before any remediless strain had commenced, and regulating the progress of cooling so that all parts of the wheel may maintain an equal temperature at all stages of cooling. Manifestly the process of the defendant embodied the same idea, and carried it out by means identical in principle. It reheats the wheels when removed from the moulds to the chamber or pit. It prolongs the cooling in connection with the reheating, and it subjects the rapidity of cooling to control of the operator. The form or structure of the furnace, chamber, or pit, is not claimed by either patentee.

It hardly seems necessary to resort to the opinions of experts in order to reach the conclusion that the process of the defendant is only formally different from that of Whitney, while the essential

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element of the two processes is the same. But the testimony of the experts examined, taken as a whole, clearly supports such a conclusion. It is true some of the witnesses testify that in their opinion the processes are different, but when they attempt to describe the difference they point out only matters which are merely formal, only variances in the mode of using the same process. On the other hand, several witnesses, entirely competent to apprehend the principle of the invention, and the devices for practically using it, have testified that the processes of the defendant and of the complainant are substantially the same in principle, mode of operation, and in the effect produced. We must, therefore, conclude that the charge of infringement made in the bill has been sustained, and that the complainant was entitled to a decree for an injunction and an account.

We come next to the consideration of the account stated by the master and confirmed by the Circuit Court.

The master reported that Mowry, the defendant, used Whitney's process in the manufacture of 19,819 wheels, and the account has been stated on that basis. For the use of the process in making these wheels the defendant has been charged with \$91,501.86 as profits made by him, (more than four dollars and sixty cents on each wheel,) besides \$19,984.21 interest upon such profits to the first day of August, 1868, and the further sum of \$10,980.22, being interest from August 1, 1868, to August 1, 1870.

It is very obvious, in view of what the patentee himself stated, under oath, in 1862, when applying for an extension of his patent,* that the account has been erroneously stated. If he was correct in this statement the profits arising from the use of his patent in manufacturing 19,819 wheels (valuing iron at the price proved to have been paid for it by the defendant) must have been less than \$5,500, instead of over \$91,000, decreed in the Circuit Court—about thirty cents per wheel, instead of four dollars and sixty cents. It is not an unfair presumption that if the profit to the patentee was no greater than he claimed it was, it could not have been more when the invention was used by an infringer. Now, it is clear that Whitney is not entitled to receive more than the profits actually made in consequence of the use of his process in the manufacture of the 19,819 wheels. It is the additional advantage the defendant derived from the process—advantage beyond what he had without it—for which he must account. But he has been held liable far above this. The master reported, in the first instance, the differ-

* See this statement, *supra*, in brackets, beginning at foot of p. 419.

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ence between the cost of the wheels and the price for which they were sold as the profits realized by Mowry, thus charging him the profit obtained from the entire wheel, instead of that resulting from the use of Whitney's invention in a part of the manufacture; and this, though he found at the same time and reported that Mowry had built up his business before he commenced the use of Whitney's process; that the use of the process did not diminish the cost of making wheels, but increased it; that while he used the process he used the same quality of iron that he had used before, and made no difference in the weight or form of the wheels, or in their price, and that the wheels made by him before he commenced the use of Whitney's invention, and since he has abandoned it, have sold as readily and at the same prices as those manufactured by that process.

Exception was taken to the charge of the profit made by the entire manufacture of the wheel, including not only the selection and mixing of the iron, but its melting, pouring into moulds, forming the chill, removing from the moulds, and cleaning, as well as annealing and slow cooling; and the case was again sent to the master with instructions to enquire:

First. Whether the wheels made and sold by the defendant had, or could have been made to have any market value without being subjected to the process patented to Whitney; and,

Second. If they had, or could have been made to have such value by any annealing or slow-cooling process, outside of the Whitney patent, how much additional value, if any, they derived from being subjected to that patented process.

Upon the findings (stated *supra*, 420—*REP.*) made by the master on this order, the court decreed against the defendant the entire profits made by him in the manufacture and sale of the wheels from beginning to end, not only the profits resulting from the reheating and regulated slow cooling in connection, but also those which may have resulted from mixing and melting the iron, casting in moulds, making the chill, and from the possible advance on the iron above its cost, with interest on the whole.

This we think was an error. The findings of the master justified no such decree. It must be conceded that the findings are incomplete, obscure, and in some particulars incongruous, but it is not a legitimate construction of them taken together, that the benefit which the defendant derived from the use of the complainant's invention was equal to the aggregate of profits he obtained from the manufacture and sale of the wheels as entireties, after they had been completed. It is as true of a process invented as an improve-

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ment in a manufacture, as it is of an improvement in a machine, that an infringer is not liable to the extent of his entire profits in the manufacture. *Jones v. Morehead*, 1 Wallace, 155; *Seymour v. McCormick*, 16 Howard, 480. If the wheels made by the defendant would have had no market value above that of cast iron if they had not been annealed and slow cooled, the same may be said if they had been cast without a chill. The same principle, therefore, which gives to the complainants the aggregate profits of the entire manufacture would give the same profits to a patentee of the process of chilling, if there were one, and as there are many processes in the manufacture, for each of which it is conceivable there might be a patent, and as every one of the processes is necessary to make a marketable wheel, an infringer might be mulcted in several times the profits he had made from the whole manufacture. We cannot assent to such a rule. The question to be determined in this case is, what advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public and adequate to enable him to obtain an equally beneficial result. The fruits of that advantage are his profits. They are all the benefits he derived from the existence of the Whitney invention. It is found that there were other processes by which the inherent strain caused by unequal cooling could be, and was prevented, counteracting which strain was the sole object of the complainant's invention, and a car-wheel could be prepared for similar service, valuable in the market, and salable at a price not less than was obtained for those which the defendant manufactured. The inquiry then is, what was the advantage in cost, in skill required, in convenience of operation, or marketability, in bringing car-wheels by Whitney's process from the condition in which they are when taken hot from the moulds, to a perfected state, over bringing them to the same state by those other processes, and thus rendering them equally fit for the same service. That advantage is the measure of profits. It is quite unimportant what name was given to the products of the processes, whether one could be called annealed wheels and the other could not, except so far as affected their marketability.

The record shows that the court overruled the alternative finding of the master, that if there is no infringement of the complainant's patent unless the wheels are subjected to the process of reheating—that is to say, if the process of slow cooling used in connection with reheating is old, and not a part of the complainant's invention, no part of the profit derived by the defendant from the manufacture and sale of the wheels was due to the use by him of

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that invention. One exception taken to this finding was that not only the entire process described in the patent, but each part of such entire process was the invention of the complainant, and the use of any material, substantial, and essential part of such entire process, the slow cooling being a substantial and material part, whereby only an improved chilled cast-iron railroad wheel could be made, and beneficial effects the same in kind if not in degree attained, that were attained by the complainant's entire process, is an infringement of complainant's patent, and the profits derived from the use of such material, substantial, and essential part, should be accounted for in this case. This exception the court sustained and thereby held that the defendant is chargeable with the profits he derived from slow cooling alone. We cannot assent to this. The patent is for an entire process, made up of several constituents. The patentee does not claim to have been the inventor of the constituents. The exclusive use of them singly is not secured to him. What is secured is their use when arranged in the process. Unless one of them is employed in making up the process, and as an element of it, the patentee cannot prevent others from using it. As well might the patentee of a machine, every part of which is an old and known device, appropriate the exclusive use of each device, though employed singly, and not combined with the others as a machine. The defendant was not, therefore, responsible for slow cooling alone, or for the profits he derived from it. He was liable to account for such profits only when he used slow cooling in connection with reheating in the manner described in Whitney's claim substantially, or when extraneous heat was employed to retard the progress of cooling. We have said that slow cooling is not claimed in the specification as the invention of the patentee. And it is found by the master that there are other modes of slow cooling, and even other modes of relieving against the inherent strain caused by unretarded cooling, than that practiced by the complainant and claimed by him. Though, therefore, slow cooling is an essential part of the complainant's process, it is an equally essential part of other processes which the defendant was at liberty to use in preparing his car-wheels for market.

We add only that in our opinion the defendant should not have been charged with interest before the final decree. The profits which are recoverable against an infringer of a patent are in fact a compensation for the injury the patentee has sustained from the invasion of his right. They are the measure of his damages. Though called profits, they are really damages, and unliquidated until the decree is made. Interest is not generally allowable upon

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unliquidated damages. We will not say that in no possible case can interest be allowed. It is enough that the case in hand does not justify such an allowance. The defendant manufactured the wheels of which the complaint is made under a patent granted to him in 1861. His infringement of the complainant's patent was not wanton. He had before him the judgment of the Patent Office that his process was not an invasion of the patent granted to the complainant, and though this does not protect him against responsibility for damages, it ought to relieve him from liability to interest on profits.

DECREE REVERSED, and the cause remanded with instructions to proceed in accordance with the rules laid down IN THIS OPINION.

GOULD v. REES.

(15 Wallace, 187.)

1. Where three elements are claimed in a patent, in combination, the use of two of the elements only does not infringe the patent.
2. The introduction of a newly-discovered element or ingredient, or one not theretofore known to be an equivalent, would not constitute an infringement.

ERROR to the Circuit Court for the Western District of Pennsylvania.

Rees sued Gould in an action at law for an alleged infringement of a patent for improvement in steam engines, dated January 24th, 1860.

The claims of the patent were as follows:

"Having thus described the nature, construction, and operation of my improvement, what I claim as my invention and desire to secure by letters patent of the United States is:

"*First.* The flanges *i* on the reversing crank or arm *b*, and the projection *t* on the cam-rod *e*, when used for the purpose of guiding the hooks *1* and *2* into their proper position on the wrists *3* and *4* of the reversing crank or arm *b*, as herein described and set forth.

"*Second.* The use of the link *m*, or its equivalent, when used in connection with the cam-rods *f* and *g*, reversing crank or arm *b*, and the crank or arm *l*, as herein described and for the purpose set forth.

"*Third.* The use of the connecting rods *o* and *g*, or their equivalents, when used in combination with the link *m*, cam-rod *e*, and levers *p* and *r*, as herein described and for the purpose set forth."

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Numerous exceptions were taken by the defendant to certain rulings of the court, and also to certain instructions to the jury, but *this* court passed mainly upon the principle involved in the second and third specifications of error, which were in these words:

"2d. The court below erred in instructing the jury in reply to the fourth point of law presented by the counsel of the defendants below, which point was in the following words:

"'That when a combination of mechanical devices is claimed, it is not infringed by the use of a combination differing substantially in any of its parts, and that the omission of one essential feature or element of the combination as claimed avoids the patent.'

"The charge of the court below to said fourth point being as follows:

"'If the jury believe that the mechanical devices used by Rees, although differing in mechanical form or construction, are equivalent to those patented and used in the combination patented to produce the same result, it is an infringement of the patent. *And this, although there is an omission of one of the features of the combination.* It is the ordinary device resorted to by those who design to infringe, and who have been unsuccessful in their experiments to produce a desired result. The law secures to the patentee the right to the use of his machine, provided it consists of a new combination, although composed of parts well known and in common use.'"

"3d. The court erred in instructing the jury in reply to the sixth point of law presented to him by the defendants' counsel, which point was in the following words:

"'That the first claim of the plaintiff's patent, in the following words, to wit: "I claim the flanges *i*, on the reversing crank or arm *b*, and the projection *t*, on the cam-rod *e*, when used for the purpose of guiding the hooks 1 and 2 into their proper position on the wrists 3 and 4 of the reversing crank or arm *b*, as described and set forth," is for a combination of the arm *b*, having flanges *i*, with the cam-rod *e* having a projection *t*, and is not infringed by the use of either of the elements of the combination without the other, nor by the use of the arm *b* if without the flanges *i*, or of the cam-rod *e* without the projection *t*.'

"The charge of the court to said sixth point being as follows:

"'The use of the combination is an infringement, and *the omission of one of the elements* and the substitution of another mechanical device to perform the same function will not avoid the infringement. All the elements of the machine may be old, and the

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invention consists in a new combination of those elements whereby a new and useful result is obtained. Most of the modern inventions are of this latter kind, and many of them are of great utility and value.' "

Verdict having gone, under these rulings, for the plaintiff, the defendant brought the case here.

Mr. G. H. Christy, for the plaintiff in error. No counsel appeared on the other side.

Mr. Justice CLIFFORD delivered the opinion of the court.

Patentable inventions may consist entirely in a new combination of old ingredients whereby a new and useful result is obtained, and in such cases the description of the invention is sufficient if the ingredients are named, the mode of operation given, and the new and useful result is pointed out, so that those skilled in the art, and the public, may know the nature and extent of the claim and what the parts are which co-operate to produce the described new and useful result.

Damages are claimed by the plaintiff for the alleged infringement of certain letters patent, and he instituted for that purpose an action of trespass on the case against the defendant to recover compensation for the alleged injury.

Letters patent were granted to the plaintiff on the twenty-fourth of January, 1860, for a new and useful improvement in steam engines, described in the specification as "a new and useful mode of operating and handling" such machines, which consists, as the patent states, in so arranging and constructing the cranks or arms of the lifters and cam-rods of puppet-valve engines that they may be operated and handled with ease and speed, by means of levers and connecting rods, the whole being arranged and constructed in the manner described in the specification.

Very minute description of the various parts of the mechanism of the invention is given in the specification, and, in order to enable others skilled in the art to make and use the invention, the patentee proceeds, with much detail, to describe its construction and operation; but in the view taken of the case by the court it will not be necessary to enter into those details in the present investigation of the controversy between these parties.

Process was issued, and, being served, the defendant appeared and pleaded as follows: (1.) That he was not guilty. (2.) That the plaintiff was not the original and first inventor of the improve-

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ment described in the letters patent, and tendered an issue to the country, which was joined by the plaintiff.

Besides the two pleas pleaded, he also gave notice in writing that he would give evidence under the general issue to prove that the alleged invention was well known and generally used in steam-boats navigating the western waters long anterior to the alleged date of the plaintiff's invention. Subsequently the parties went to trial, and the jury, under the instructions given by the court, returned their verdict for the plaintiff, and the defendant excepted to certain rulings and to the instructions of the court, and sued out a writ of error and removed the cause into this court.

Enough has already been remarked to show what the general nature, construction, and operation of the improvement is without entering more into the details of the description, as given in the specification, except to reproduce the claims of the patent as made by the patentee. They are as follows: First. The flanges on the reversing crank or arm, and the projection on the cam-rod, when used for the purpose of guiding the hooks into their proper position on the wrists of the reversing crank or arm, as described and set forth in the descriptive portion of the specification. Second. The use of the link, or its equivalent, when used in connection with the cam-rods, reversing crank or arm, and the other crank or arm, as therein described and for the purpose therein set forth. Third. The use of the connecting rods, or their equivalents, when used in combination with the described link, cam-rod, and levers, as therein described and set forth.

Argument to show that each of the claims is for a combination of ingredients is unnecessary, as the statement of the respective claims is sufficient to establish the affirmative of the proposition; nor is it necessary to add anything to show that all of the ingredients of the respective claims are old, as the specification does not contain a word to justify the theory that the patentee ever pretended that he had invented anything except the several combinations described in the three claims of his letters patent.

Exceptions were taken by the defendant to certain rulings of the court, as well as to several of the instructions given by the court to the jury, and all or nearly all of those rulings and instructions are assigned for error in this court, but in the view of the case taken by this court, it will not be necessary to examine more than one of the exceptions, which is the one calling in question the instruction defining the rights of a patentee where the invention consists solely in a combination of old ingredients, as the proposition of law given to the jury in that instruction is clearly erroneous, and of a charac-

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ter which entitles the defendant to a reversal of the judgment and to a new trial.

Evidence was introduced on both sides, and the defendant requested the presiding justice to instruct the jury that when a combination of mechanical devices is claimed, the patent is not infringed by the use of a combination differing substantially in any of its parts, and that the omission of one essential feature or element of the combination as claimed avoids the infringement, repeating that request in respect to each of the three claims of the patent, and the bill of exceptions shows that the presiding justice refused to give the instruction as to any one of the three claims, and that he instructed the jury in respect to the second (qu. *first* claim—REP.) claim that the use of the combination is an infringement, and that the omission of one of the elements and the substitution of another mechanical device to perform the same function will not avoid the infringement, adding what undoubtedly is correct, that the elements of the machine may be old, and the invention consist in a new combination of old elements, whereby a new and useful result is obtained.

Just exception cannot be taken to the last paragraph of the instruction, but the preceding clause, which asserts that the omission of one of the elements and the substitution of another mechanical device to perform the same function will not avoid the infringement, cannot be sustained, as the principle as there stated, without any qualification, is not correct, and when given, as the instruction was, without any explanation, it was well calculated to mislead the jury.

Mere formal alterations of a combination in letters patent do not constitute any defense to the charge of infringement, as the inventor of a combination is as much entitled to suppress every other combination of the same ingredients to produce the same result, not substantially different from what he has invented and caused to be patented, as the inventor of any other patented improvement. Such inventors may claim equivalents as well as any other class of inventors, and they have the same right to suppress every other subsequent improvement, not substantially different from what they have invented and secured by letters patent, but they cannot suppress subsequent improvements which are substantially different from their inventions, whether the new improvement consists in a new combination of the same ingredients or of some newly-discovered ingredient, or even of some old ingredient performing some new function, not known at the date of the letters patent, as a

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proper substitute for the ingredient withdrawn. *Seymour v. Osborne*, 11 Wallace, 555.

Unquestionably the withdrawal of one ingredient in a patented combination and the substitution of another which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination; and if the ingredient substituted performs substantially the same function as the one withdrawn, it would be correct to instruct the jury that such a substitution of one ingredient for another would not avoid the charge of infringement.

Grant all that, and still it is clear that the concession will not support the charge of the court, as it is equally clear that if the combination constituting the invention claimed in the subsequent patent was new, or if the ingredient substituted for the one withdrawn was a newly discovered one, or even an old one performing some new function, and was not known at the date of the plaintiff's patent, as a proper substitute for the ingredient withdrawn, it would avoid the infringement, as a new combination or a newly-discovered ingredient substituted for the one omitted, or even an old one performing a new function not known at the date of the plaintiff's patent as a proper substitute for the one withdrawn, would not be an equivalent for the ingredient omitted within the meaning of the patent law; nor could it be successfully claimed as such by the plaintiff in order to support the charge of infringement. Such an alteration is not a mere formal alteration, as the difference between the two improvements is such that the new combination would be the proper subject of a patent and consequently would avoid the charge of infringement in a case like the one supposed by the court.

Unexplained, the theory assumed by the court warranted the jury in finding for the plaintiff, though the defendant in constructing his machine omitted one of the ingredients of the plaintiff's combination and substituted another in its place to perform the same function, whether the ingredient substituted for the one omitted was or was not newly discovered, or was or was not well known at the date of the plaintiff's patent as a proper substitute for the one omitted from the combination constituting the plaintiff's invention.

Bona fide inventors of a combination are as much entitled to equivalents as the inventors of other patentable improvements; by which is meant that a patentee in such a case may substitute another ingredient for any one of the ingredients of his invention if the ingredient substituted performs the same function as the one omitted and was well known at the date of the patent as a proper

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substitute for the one omitted in the patented combination. Apply that rule, and it is clear that an alteration in a patented combination which merely substitutes another old ingredient for one of the ingredients in the patented combination is an infringement of the patent, if the substitute performs the same function and was well known at the date of the patent as a proper substitute for the omitted ingredient, but the rule is otherwise if the ingredient substituted was a new one, or performs a substantially different function, or was not known at the date of the plaintiff's patent as a proper substitute for the one omitted from his patented combination.

Where the defendant in constructing his machine omits entirely one of the ingredients of the plaintiff's combination without substituting any other, he does not infringe, and if he substitutes another in the place of the one omitted, which is new or which performs a substantially different function, or if it is old, but was not known at the date of the plaintiff's invention as a proper substitute for the omitted ingredient, then he does not infringe. *Carver v. Hyde*, 16 Peters, 514; *Vance v. Campbell*, 1 Black, 427; *Roberts v. Harnden*, 2 Clifford, 504; *Mabie v. Haskell*, Ib., 511; *Brooks v. Fiske*, 15 Howard, 219; *Stimpson v. Railroad*, 10 Id., 329; *Prouty v. Ruggles*, 16 Peters, 341; *Barrett v. Hall*, 1 Mason, 477; *Howe v. Abbott*, 2 Story, 194.

Tested by these principles, as the instruction in question must be, it is plainly erroneous, as it warranted the jury in finding for the plaintiff, whether the ingredient substituted for the one omitted was new or old, or whether the one substituted was or was not well known at the date of the plaintiff's patent as a proper substitute for the omitted ingredient.

JUDGMENT REVERSED AND A NEW VENIRE ORDERED.

MITCHELL v. HAWLEY.

(16 Wallace, 544.)

A patentee of certain machines, whose original patent had still between six and seven years to run, conveyed to another person the "right to make and use and to license to others the right to make and use four of the machines" in two States "during the remainder of the original term of the letters patent, provided, that the said grantee shall not in any way or form dispose of, sell, or grant any license to use the said machines *beyond* the said term." The patent having, towards the expiration of the original term, been extended for seven years, held, that an injunction by a grantee of the extended term would lay to restrain the use of the four machines, they being in use after the term of the original patent had expired.

Statement of the case.

APPEAL from the Circuit Court for the District of Massachusetts; the case being thus:

The 18th section of the Patent Act of July 4th, 1836, (5 Stat. at Large, 125,) after enacting that patents may in certain cases be extended, and that "thereupon the said patent shall have the same effect in law as though it had been originally granted for the term of twenty-one years," adds :

"And the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented to the extent of their respective interests therein."

With this statutory enactment in force the United States, on the 3d of May, 1853, granted a patent to one Taylor for fourteen years for improved machinery in felting hats, the patent lasting, of course, till May 3d, 1867.

While the patent was in force, that is to say on the 19th of November, 1860, Taylor, by deed reciting that one Bayley was "desirous of obtaining the exclusive right to make and use, and license to others the right to use the said machines in the States of Massachusetts and New Hampshire," "conveyed to the said Bayley" certain rights, as follows :

"The exclusive right to make and use, and to license to others the right to use the said machines in the said States of Massachusetts and New Hampshire, and in no other place or places, during the remainder of the original term of said letters patent. *Provided,* that the said Bayley shall not in any way or form dispose of, sell, or grant any license to use the said machines beyond the 3d day of May, A. D. 1867.

"Should the said letters patent be extended beyond the 3d of May, A. D. 1867, then it is agreed that the said Bayley shall have the right to control the same in the said States of Massachusetts and New Hampshire, provided that he shall pay to the said grantor or his heirs or assigns, a fair and reasonable compensation for the same, or on terms as favorable as may be offered by any other person or party."

In possession of this license Bayley, on the 18th of March, 1864, in consideration of \$1,200, licensed one Mitchell and others, of the town of Haverhill, Massachusetts, to run and use two sets (four machines) for felting hats, in said town of Haverhill, *under Taylor's patent, bearing date May 3d, A. D. 1864.*

Before the patent expired, (May 3d, 1867,) the Commissioner of Patents renewed and extended it for the further term of seven years; and one Hawley, having become the owner of this extended

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term for the States of Massachusetts and New Hampshire, filed a bill against Mitchell and the others to restrain them from using the four machines which Bayley, on the 18th of March, 1864, had given them license to use, it being admitted that the said Mitchell *et al.* were now using those identical machines.

The court below granted the injunction, and the defendants took this appeal.

Mr. F. A. Brooks, for the appellant, relying on *Bloomer v. Millinger*, 1 Wallace, 351, and on the 18th section of the Patent Act, contended that a sale of machines by the patentee himself operated to take the thing sold out of the reach of the Patent Act altogether, and that as long as the machines themselves lasted, the owner could use them.

Mr. J. E. Manadier, contra: argued that her right to make and use, and to license to others the right to use, was expressly limited as to duration by apt words, showing clearly an intent that it should not survive the original term of the patent; that this was a perfectly lawful sort of contract, and therefore that the rights must expire with that term; for that neither the 18th section of the Patent Act nor anything laid down in *Bloomer v. Millinger* was applicable.

Mr. Justice CLIFFORD delivered the opinion of the court.

Patentees acquire by their letters patent the exclusive right to make and use their patented inventions, and to vend the same to others to be used for the period of time specified in the patent, but when they have made one or more of the things patented, and have vended the same to others to be used, they have parted to that extent with their exclusive right, as they are never entitled to but one royalty for a patented machine, and consequently a patentee, when he has himself constructed a machine and sold it without any conditions, or authorized another to construct, sell, and deliver it, or to construct and use and operate it, without any conditions, and the consideration has been paid to him for the thing patented, the rule is well established that the patentee must be understood to have parted to that extent with all his exclusive right, and that he ceases to have any interest whatever in the patented machine so sold and delivered or authorized to be constructed and operated. Where such circumstances appear, the owner of the machine, whether he built it or purchased it, if he has also acquired the right to use and operate it during the lifetime of the patent, may continue to use it until it is worn out, in spite of

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any and every extension subsequently obtained by the patentee or his assigns. *Bloomer v. Millinger*, 1 Wallace, 350.

Patents were granted, under the prior Patent Act, for the term of fourteen years, but the provision was that a patentee in certain cases might have the term extended for seven years from and after the expiration of the first term, and the same section provided that the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented to the extent of their respective interests therein, which last provision has frequently been misunderstood. Such misapprehension has usually arisen from a failure to keep in view the well-founded distinction between the grant and the right to make and vend the patented machine, and the grant of the right to use it, as was first satisfactorily pointed out by the late Chief Justice Taney with his accustomed clearness and precision. *Bloomer v. McQuewan*, 14 Howard, 549; *Chaffee v. Boston Belting Co.*, 22 Id., 223.

Purchasers of the exclusive privilege of making or vending the patented machine hold the whole or a portion of the franchise which the patent secures, depending upon the nature of the conveyance, and of course the interest which the purchaser acquires terminates at the time limited for its continuance by the law which created the franchise, unless it is expressly stipulated to the contrary. But the purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life stands on different grounds, as he does not acquire any right to construct another machine either for his own use or to be vended to another for any purpose. Complete title to the implement or machine purchased becomes vested in the vendee by the sale and purchase, but he acquires no portion of the franchise, as the machine, when it rightfully passes from the patentee to the purchaser, ceases to be within the limits of the monopoly.

Patented implements or machines sold to be used in the ordinary pursuits of life become the private individual property of the purchasers, and are no longer specifically protected by the patent laws of the State where the implements or machines are owned and used. Sales of the kind may be made by the patentee with or without conditions, as in other cases, but where the sale is absolute, and without any conditions, the rule is well settled that the purchaser may continue to use the implement or machine purchased until it is worn out, or he may repair it or improve upon it as he pleases, in same manner as if dealing with property of any other kind.

Letters patent were granted to James F. Taylor for new and useful improvements in machinery for felting hats, bearing date the third

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of May, 1853, securing to him the exclusive right to make and use and to vend to others the right to make and use the said machines for the term of fourteen years from the date of the letters patent. Due conveyance or license, subject to certain restrictions and limitations, was made by the patentee of the exclusive right to make and use "*and to license to others the right to use the said machines*" in the States of Massachusetts and New Hampshire, *during* the remainder of the original term of said letters patent, it being expressly stipulated in the instrument of conveyance that the licensee "*shall not, in any way or form, dispose of, sell, or grant* any license to use the said machines beyond the expiration" of the original term. Apart from that the patentee also stipulated that the said licensee, if the patent should be extended, should have the right to control the same in those two States, he paying to the grantors in his license, or their heirs or assigns, a fair and reasonable compensation for the same, on terms as favorable as may be offered to any other person or party. Bayley, as such licensee, on the eighteenth of March, 1864, constructed four machines, being two sets, and sold the machines, "with the right to run" the same, to the grantors of the respondents, for the sum of twelve hundred dollars, executing to the purchasers at the same time a license under his hand and seal, authorizing the purchasers, as such licensees, "to run and use two sets (four machines) for felting hats, in said town of Haverhill, under Taylor's patent, bearing date as specified in the original letters patent," showing conclusively that the purchasers were referred to the original letters patent as the source of his authority. Of course said letters patent expired on the third of May, 1867, and the record shows that the Commissioner, before the term expired, renewed the letters patent and extended the same for the further term of seven years from the expiration of the original term, and that the complainants having become by certain mesne conveyances, duly recorded, the exclusive assignees of the right, title, and interest in the renewed letters patent for those two States, instituted the present suit to restrain the respondents from using the four machines which they or their grantors purchased of the licensee under the original letters patent. They appeared to the suit and filed an answer setting up as a defense to the charge of infringement that they are by law authorized to continue to use the four machines just the same under the extended letters patent as they had the right to do under the original patent, when the purchase was made by those under whom they claimed, which is the only question in the case.

No one in general can sell personal property and convey a valid

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title to it unless he is the owner or lawfully represents the owner. *Nemo dat quod non habet.* Persons, therefore, who buy goods from one not the owner, and who does not lawfully represent the owner, however innocent they may be, obtain no property whatever in the goods, as no one can convey in such a case any better title than he owns, unless the sale is made in market overt, or under circumstances which show that the seller lawfully represented the owner. *Foxley's Case*, 5 Coke, 109a; 2 Blackstone's Commentaries, 449; 2 Kent, 11th ed., 224; *Williams v. Merle*, 11 Wendell, 80; *Stone v. Marsh*, 6 Barnewall & Creswell, 551; *Marsh v. Keating*, 1 Birmingham, New Cases, 198; *Marsh v. Keating*, 2 Clarke & Finelly, 250; Benjamin on Sales, 4; *White v. Spettigue*, 13 Meeson & Welsby, 603; 1 Smith's Leading Cases, 7th edition, 1195; 1 Parsons Con., 5th ed., 520.

Argument to show that the grantor under whom the respondents claim never acquired the right to sell the machines and give their purchasers the right to use the same in the ordinary pursuits of life beyond the term of the original patent is certainly unnecessary, as the instrument of conveyance from the patentee to him, which describes all the title he ever had, expressly stipulates that he shall not in any way or form dispose of, sell, or grant any license to use the said machines beyond the expiration of that term of the patent, and the form of the license which he gave to the purchasers shows conclusively that he understood that he was not empowered to give a license which should extend beyond that limitation. Notice to the purchaser in such a case is not required, as the law imposes the risk upon the purchaser, as against the real owner, whether the title of the seller is such that he can make a valid conveyance. Certain exceptions undoubtedly exist to that rule, but none of them have any application to this case. Suppose the rule was otherwise, and that the real owner, in order to defeat the title of the purchaser, must show that the latter knew what the facts were, the court would still be of the opinion that the decree ought to be affirmed, as the terms of the license which the seller gave to the purchasers were sufficient to put them upon inquiry, and it is quite obvious that the means of knowledge were at hand, and that if they had made the least inquiry they would have ascertained that their grantor could not give them any title to use the machines beyond the period of fourteen years from the date of the original letters patent, as he was only a licensee and never had any power to sell a machine so as to withdraw it indefinitely from the operation of the franchise secured by the patent.

DECREE AFFIRMED.

Statement of the case.

ADAMS v. BURKE.

(17 Wallace, 453.)

1. Where a patentee has assigned his right to manufacture, sell, and use within a limited district an instrument, machine, or other manufactured product, a purchaser of such instrument or machine, when rightfully bought within the prescribed limits, acquires by such purchase the right to use it anywhere, without reference to other assignments of territorial rights by the same patentee.
2. The right to the use of such machines or instruments stands on a different ground from the right to make and sell them, and inheres in the nature of a contract of purchase, which carries no implied limitation of the right of use within a given locality.

APPEAL from the Circuit Court for the District of Massachusetts; the case being thus:

On the 26th day of May, 1863, letters patent were granted to Merrill & Horner, for a certain improvement in coffin-lids, giving to them the exclusive right of making, using, and vending to others to be used, the said improvement.

On the 13th day of March, 1865, Merrill & Horner, the patentees, by an assignment duly executed and recorded, assigned to Lockhart & Seelye, of Cambridge, in Middlesex county, Massachusetts, all the right, title, and interest which the said patentees had in the invention described in the said letters patent, for, to, and in a circle whose radius is ten miles, having the city of Boston as a centre. They subsequently assigned the patent, or what right they retained in it, to one Adams.

Adams now filed a bill in the court below, against a certain Burke, an undertaker, who used in the town of Natick (a town about seventeen miles from Boston, and therefore outside of the circle above mentioned) coffins with lids of the kind patented, alleging him to be an infringer of their patent, and praying for an injunction, discovery, profits, and other relief suitable against an infringer.

The defendant pleaded in bar:

“That he carries on the business of an undertaker, having his place of business in Natick in said district; that, in the exercise of his said business, he is employed to bury the dead; that when so employed it is his custom to procure hearses, coffins, and whatever else may be necessary or proper for burials, and to superintend the preparation of graves, and that his bills for his services in each case, and the coffin, hearse, and other articles procured by him, are paid by the personal representatives of the deceased; that, since the date of the alleged assignment to the plaintiff of an interest in

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the invention secured by the said letters patent, he has sold no coffins, unless the use of coffins by him in his said business, as above described, shall be deemed a sale; has used no coffins, except in his said business as aforesaid; and has manufactured no coffins containing the said invention; and that since the said date he has used in his business as aforesaid, in Natick, no coffin containing the invention secured by said letters patent, except such coffins containing said invention as have been manufactured by said Lockhart & Seelye, within a circle, whose radius is ten miles, having the city of Boston as its centre, and sold within said circle by said Lockhart & Seelye, without condition or restriction."

The validity of this plea was the question in the case. The court below, referring to the case of *Bloomer v. McQuewan*, 14 Howard, 549, in which Taney, C. J., delivering the opinion of the court, said:

"When a machine passes to the hands of the purchaser, it is no longer within the limits of the monopoly. It passes outside of it, and is no longer under the protection of the act of Congress."

And referring also to some other cases, held that the plea was good. And from a decree which followed, dismissing, of course, the bill, this appeal was taken.

Mr. C. B. Goodrich, for the appellant; Messrs. R. H. Dana and L. S. Dabney, contra.

Mr. Justice MILLER delivered the opinion of the court.

The question presented by the plea in this case is a very interesting one in patent law, and the precise point in it has never been decided by this court, though cases involving some of the considerations which apply to it have been decided, and others of analogous character are frequently recurring. The vast pecuniary results involved in such cases, as well as the public interest, admonish us to proceed with care, and to decide in each case no more than what is directly in issue.

We have repeatedly held that where a person had purchased a patented machine of the patentee or his assignee, this purchase carried with it the right to the use of that machine so long as it was capable of use, and that the expiration and renewal of the patent, whether in favor of the original patentee or of his assignee, did not affect this right. The true ground on which these decisions rest is that the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the use of that

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machine to the full extent to which it can be used in point of time.

The right to manufacture, the right to sell, and the right to use are each substantive rights, and may be granted or conferred separately by the patentee.

But, in the essential nature of things, when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use, and he parts with the right to restrict that use. The article, in the language of the court, passes without the limit of the monopoly, *Bloomer v. McQuewan*, 14 Howard, 549; *Mitchell v. Hawley*, 16 Wallace, 544. That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction on account of the monopoly of the patentees.

If this principle be sound as to a machine or instrument whose use may be continued for a number of years, and may extend beyond the existence of the patent, as limited at the time of the sale, and into the period of a renewal or extension, it must be much more applicable to an instrument or product of patented manufacture which perishes in the first use of it, or which, by that first use, becomes incapable of further use, and of no further value. Such is the case with the coffin-lids of appellant's patent.

It seems to us that, although the right of Lockhart & Seelye to manufacture, to sell, and to use these coffin-lids was limited to the circle of ten miles around Boston, that a purchaser from them of a single coffin acquired the right to use that coffin for the purpose for which all coffins are used. That so far as the use of it was concerned, the patentee had received his consideration, and it was no longer within the monopoly of the patent. It would be to engrave a limitation upon the right of use not contemplated by the statute nor within the reason of the contract to say that it could only be used within the ten-mile circle. Whatever, therefore, may be the rule when patentees subdivide territorially their patents, as to the exclusive right to make or to sell within a limited territory, we hold that in the class of machines or implements we have described, when they are once lawfully made and sold, there is no restriction on their use to be implied for the benefit of the patentee or his assignees or licensees.

A careful examination of the plea satisfies us that the defendant, who, as an undertaker, purchased each of these coffins and used it in burying the body which he was employed to bury, acquired the

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right to this use of it freed from any claim of the patentee, though purchased within the ten-mile circle and used without it.

The decree of the Circuit Court dismissing the plaintiff's bill is, therefore,

AFFIRMED.

Mr. Justice BRADLEY, (with whom concurred Justices SWAYNE and STRONG,) dissenting :

The question raised in this case is whether an assignment of a patented invention for a limited district, such as a city, a county, or a State, confers upon the assignee the right to sell the patented article to be used outside of such limited district. The defendant justifies under such a claim. He uses a patented article outside of the territory within which the patent was assigned to the persons from whom he purchased it. The plaintiff, who claims under the original patentee, complains that this is a transgression of the limits of the assignment.

If it were a question of legislative policy, whether a patentee should be allowed to divide up his monopoly into territorial parcels, it might admit of grave doubt whether a vendee of the patented article purchasing it rightfully, ought to be restrained or limited as to the place of its use. But the Patent Act gives to the patentee a monopoly of use, as well as of manufacture, throughout the whole United States; and the eleventh section of the act (of 1836) expressly authorizes not only an assignment of the whole patent, or any undivided part thereof, but a "grant and conveyance of the exclusive right under any patent, to make and use, and to grant to others to make and use the thing patented within and throughout any specified part or portion of the United States." *Washburn v. Gould*, 3 Story, 131; *Blanchard v. Eldridge*, 1 Wallace, Jr., 339.

If an assignment under this clause does not confer the same rights within the limited district which the patentee himself previously had in the whole United States, and no more, it is difficult to know what meaning to attach to language however plain.

On the 26th day of May, 1863, letters patent were granted to Merrill & Horner, for a certain improvement in coffin-lids, giving to them the exclusive right of making, using, and vending to others to be used, the said improvement.

On the 13th day of March, 1865, Merrill & Horner, the patentees, by an assignment duly executed and recorded, did assign to Lockhart & Seelye, of Cambridge, in Middlesex county, Massachusetts, all the right, title, and interest which the said patentees had in the invention described in the said letters patent, for, to, and in

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a circle whose radius is ten miles, having the city of Boston as a centre. By necessary consequence, (as it seems to me,) the right thus assigned consisted of the exclusive right to make, use, and vend the improved coffin-lid within the limited territory described; but did not include any right to make, use, or vend the same outside of those limits. As the assigned right to make the lids was a restricted right, limited to the territory, so the assigned right to use them was a restricted right limited in the same manner. Each right is conveyed by precisely the same language. A different construction would defeat the intent of the parties. For if the assignees, after making any number of lids within the limited district, could use them or authorize others to use them outside of the district, the balance of the monopoly remaining in the hands of the patentees might be rendered of little value.

If it be contended that the right of vending the lids to others enables them to confer upon their vendees the right to use the lids thus sold outside of the limited district, the question at once arises, how can they confer upon their vendees a right which they cannot exercise themselves? The only consistent construction to be given to such an assignment is, to limit all the privileges conferred by it to the district marked out. It is an assignment of the manufacture and use of the patented article within that district, and within that district only.

Difficulties may, undoubtedly, be suggested in special cases. If the patented thing be an article of wearing apparel, sold by the assignee within his district, it is confidently asked, cannot the purchaser wear the article outside of the district? The answer to acute suggestions of this sort would probably be found (in the absence of all bad faith in the parties) in the maxim *de minimis non curat lex*.

On the other hand, the difficulties and the injustice which would follow from a contrary construction to that which I contend for, are very obvious. Take the electric telegraph, for example. Suppose Professor Morse had assigned his patent within and for the New England States. Would such an assignment authorize the vendees of his assignees to use the apparatus in the whole United States? Take the planing machine: would an assignment from Woodworth of his patent within and for the State of Vermont, authorize the assignees to manufacture machines *ad libitum*, and sell them to parties to be used in other States? So of Hoe's printing press, and a thousand other machines and inventions of like sort.

Such a doctrine would most seriously affect not only the assignor, (as to his residuary right in his patent,) but the assignee also

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For if it be correct, there would be nothing to prevent the patentee himself, after assigning his patent within a valuable city or other locality, from selling the patent machine or article to be used within the assigned district. By this means the assignment could be, and in numberless instances would be, rendered worthless. Millions of dollars have been invested by manufacturers and mechanics in these limited assignments of patents in our manufacturing districts and towns, giving them, as they have supposed, the monopoly of the patented machine or article within the district purchased. The decision of the court in this case will, in my view, utterly destroy the value of a great portion of this property.

I do not regard the authorities cited as establishing a different doctrine from that now contended for. The remark of Chief Justice Taney, in *Bloomer v. McQuewan*, that "when a machine passes to the hands of a purchaser, it is no longer within the limits of the monopoly; it passes outside of it, and is no longer under the protection of the act of Congress," is perfectly true in the sense and application in which the Chief Justice made it. He was speaking of time, not territory; of the right to use a machine after the original patent had expired and a renewal had been granted, not of using it in a place outside of the grant. All the effects mentioned by the Chief Justice would undoubtedly follow so far forth as it was in the power of the vendor to produce them, but no further. And he would never have contended that those effects would follow any further than the vendor's power to produce them extended. That is the very question in this case. How far did the assignee's interest and, therefore, his power extend? In my judgment it was limited in locality, both as to manufacture and use, and that he could not convey to another what he did not have himself. I hold, therefore, that the decree should be reversed.

PHILP ET AL. v. NOCK.

(17 Wallace, 460.)

In a suit by a patentee, for damages against an infringer, the plaintiff can recover only for actual damages, and he must show the damages by evidence. They cannot be left to conjecture by the jury. Where he has sought his profit in the form of a royalty paid by his licensees, and there are no peculiar circumstances, the amount to be recovered will be regulated by that standard. Counsel fees cannot be included in the verdict, and an instruction which directed the jury to award to the plaintiff "such sum as they should find to be required to remunerate him for the loss sustained by the wrongful act of the defendants, and to reimburse him for

Argument for the defendant in error.

all such expenditures as have been necessarily incurred by him in order to establish his right," was held to be erroneous, as too broad and vague, and as tending to lead the jury to suppose that it was their duty to allow counsel fees, and perhaps other charges and expenditures equally inadmissible.

ERROR to the Supreme Court of the District of Columbia.

Nock brought an action in the court below against Philp and others to recover damages for the infringement of a patent granted to him by the United States for an improvement touching the lids of inkstands and the hinge whereby such lids are attached. The case came on to be tried in March, 1870, and therefore while the Patent Act of July 4th, 1836, (5 Stat. at Large, 123,) which in suits against infringers gives to patentees "the actual damages sustained" by them, was in force; a similar provision, however, being made in the subsequent Patent Act of July 8th, 1870. 16 Id., 207. The bill of exceptions showed that the plaintiff gave in evidence that during the term of the patent "the defendants had sold inkstands having hinges that were infringements of the plaintiff's patent, to the number of seventy-five dozen, and that the royalty which the plaintiff received for the use of his patent was at the rate of \$2 per gross." The testimony being closed, the court instructed the jury as follows:

"If the jury shall find a verdict for the plaintiff under the foregoing instructions, they will award him such sum as they shall find to be required to remunerate him for the loss sustained by the wrongful act of the defendants, and *to reimburse him for all such expenditures as have been necessarily incurred by him in order to establish his right.*"

To this instruction the defendant excepted.

A verdict and judgment having been given for the plaintiff in the sum of \$500, the defendants brought the case here.

Mr. R. D. Mussey, for the plaintiff in error:

All the injury proved was that the defendants withheld royalty to the amount of \$12.50. There was no evidence of any "expenditure by Nock, and the instruction had no foundation in the evidence. Its inevitable effect upon the minds of the jury was to lead them to believe they might lump counsel fees, and such other expenditures as they inferred, and out of them make a total. The jury followed this evident lead of the court, and returned a verdict for forty times the amount proven.

Mr. G. W. Paschal, contra:

The bill of exceptions does not show all the evidence in the case,

Syllabus.

but it may be gathered that the plaintiff below proved that the defendants had infringed his right by selling seventy-five dozen inkstands. What further facts he proved is not stated.

Mr. Justice SWAYNE delivered the opinion of the court.

The measure of the damages to be recovered against infringers prescribed by the act of 1836 as well as by the act of 1870, is "the actual damages sustained by the plaintiff." Where the plaintiff has sought his profit in the form of a royalty paid by his licensees, and there are no peculiar circumstances in the case, the amount to be recovered will be regulated by that standard. If that test cannot be applied, he will be entitled to an amount which will compensate him for the injury to which he has been subjected by the piracy. In arriving at their conclusion, the profit made by the defendant and that lost by the plaintiff are among the elements which the jury may consider. Where the infringement is confined to a part of the thing sold, the recovery must be limited accordingly. It cannot be as if the entire thing were recovered by the patent; or, where that is the case, as if the infringement were as large as the monopoly. Counsel fees cannot be included in the verdict. The plaintiff must show his damages by evidence. They must not be left to conjecture by the jury. They must be proved, and not guessed at.

The instruction under consideration was too broad and too vague. The jury could have hardly doubted that it was their duty to allow the counsel fees paid or to be paid by the plaintiff, and perhaps other charges and expenditures equally inadmissible.

JUDGMENT REVERSED, and the cause remanded to the court below, with directions to issue

A VENIRE DE NOVO.

CARLTON v. BOKEE.

(17 Wallace, 463.)

1. Where a claim in a patent uses general terms of reference to the specification, such as "substantially in the manner and for the purpose herein set forth," although the patentee will not be held to the precise combination of all the parts described, yet his claim will be limited, by reference to the history of the art, to what was really first invented by him.
2. General claims inserted in a reissued patent will be carefully scrutinized, and will not be permitted to extend the rights of the patentee beyond what is shown by the history of the art to have been really his invention. If made to embrace more the claim will be void.
3. One void claim, if made by inadvertence and in good faith, will not vitiate the entire patent.

Opinion of the court.

APPEAL from the Circuit Court for the District of Maryland.

William Carlton *et al.*, as assignees of Christian Reichmann, filed their bill in equity in the court below to restrain Howard Bokee from infringing a patent for an improvement in lamps, granted to Reichmann on the 21st of September, 1858, and reissued to Carlton and one Merrill on the 11th of August, 1868.

The court below dismissed the bill, and the complainant took this appeal.

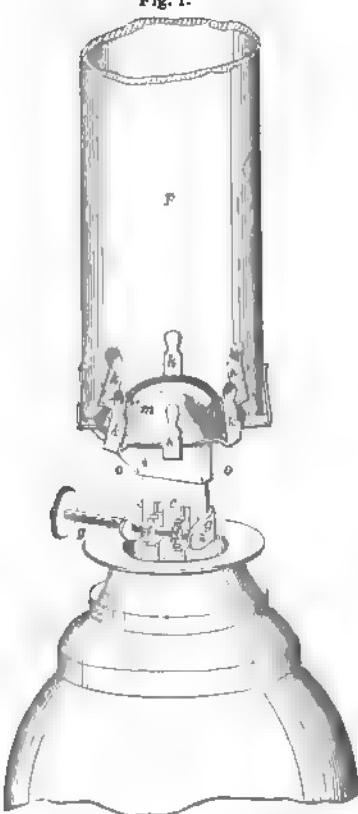
The case can be gathered from the facts stated in the opinion of the court.

Messrs. J. H. B. Latrobe and B. R. Curtis, for the appellant; Messrs. C. F. Blake and C. M. Keller, contra.

Mr. Justice BRADLEY stated the facts and delivered the opinion of the court.

The lamp, as patented to Reichmann, was one of a large number of attempts made about the time to utilize petroleum and its various products for purposes of illumination. The old lamps adapted to sperm oil, lard, and other gross and sluggish oils were unfitted for the use of so volatile and dangerous a substance. In them the flame was set close to the lamp, and the tube holding the wick was projected downward into the oil, so that the heat of the flame might be communicated thereto, in order to render it more fluid and susceptible to the capillary attraction of the wick. Such an arrangement as this with petroleum would have produced a speedy explosion. This article required that the flame should be elevated as far as possible above the lamp and that the metallic wick-tube should not communicate any heat to the fluid. This was one object to be attained in the burners required for the use of the new illu-

Fig. 1.



Opinion of the court.

minator. Another was some contrivance for concentrating a current of air upon the flame itself, so as to consume as perfectly as possible all the rapidly-escaping volatile gases, both as a saving of light and as a preventive of the disagreeable odors which they would otherwise diffuse.

Reichmann's burner, illustrated in Figure 1, was intended to accomplish these main objects as well as some subsidiary ones, which will hereafter appear. It consisted of several distinct parts, combined and arranged in a particular manner. First, a flat wick-tube (indicated in the figure by the letter *c*) attached to the cap or stopper of the lamp, and rising above the same one or two inches, more or less, according to the size of the burner, but not projecting into the lamp below. Secondly, ratchet-wheels attached to the side of the wick-tube on a small shaft, (*g.*) for raising and lowering the wick. Thirdly, a slide or sleeve (*i*) fitted to slip up and down over the wick-tube, and sufficiently tight to stay in any position thereon, and furnished with arms, (*o, o,*) two or more, for supporting above the wick-tube a dome or deflector, (*m.*) Fourthly, the dome aforesaid, having an oval or oblong slot for the flame to pass through, so that part of the flame might be above the dome and part below it. The object of this dome was to collect and concentrate the air upon the flame, in order to make it burn more brightly and consume the hydro-carbon and other gases which emanated from the petroleum. It also acted as a deflector of the light proceeding from the lower part of the flame, whereby it was thrown downward towards and around the lamp, whereas the light from that part of the flame above the dome was all thrown upward or horizontally about the room. Fifthly, around the periphery of the dome several narrow slips of the metal (*k*) were turned up, to act as arms or supports to the glass chimney of the lamp, and between these arms spaces were cut out of the edge of the dome, to allow air to pass up between the dome and chimney for the purpose of guiding the flame and feeding it with additional oxygen. Sixthly, the chimney itself, (*p.*) which was placed inside of and upon the said arms or supports, and held in its position thereby.

This was the combination of elements of which Reichmann's burner consisted, and it will be perceived that the chimney was so elevated that the flame of the lamp below the dome was exposed on every side, and a current of air or a rapid movement of the lamp would extinguish it. This was the great defect of the burner, which prevented its introduction into general use, and rendered it of little value. The principal advantage which Reichmann in his patent claimed for it was that it allowed the light from the under

Opinion of the court.

side of the deflector to be reflected or thrown downward upon the table or lamp. This was effected by the use of upright, slender arms to support the dome, so that the space around and underneath the dome was left open and uninclosed. He also claimed some less important advantages in his arrangement of the ratchet-

Fig. 2.

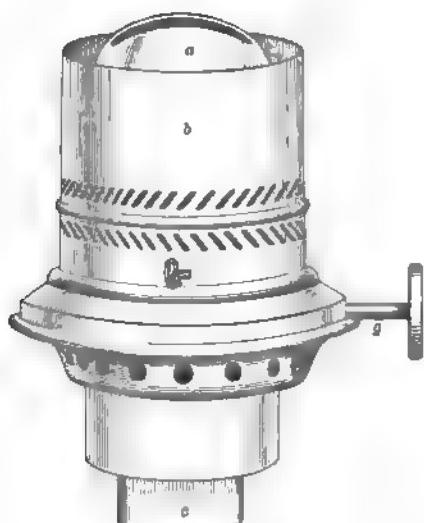


Fig. 3.

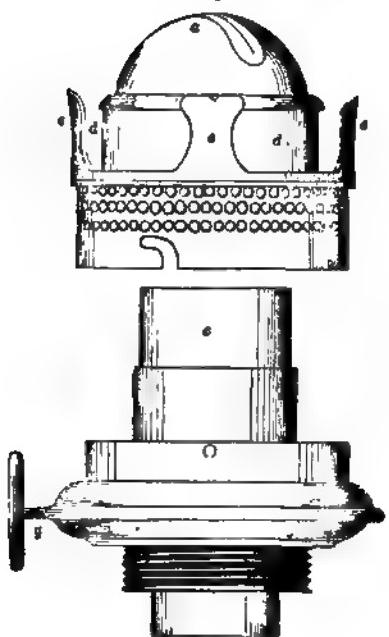
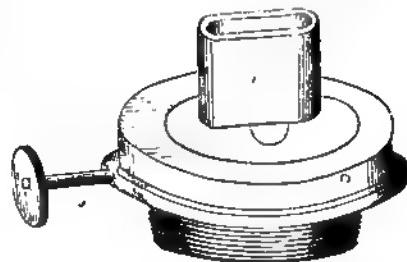
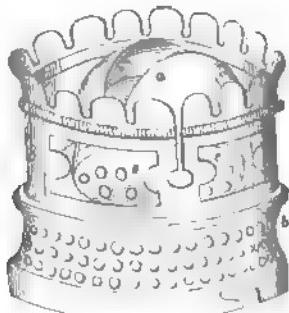


Fig. 4.



Opinion of the court.

wheels for raising the wick, and one or two other things of no importance in this controversy.

The patent had but one claim and that amounted to the general combination of elements referred to and their peculiar arrangement. It was in these words:

"What I claim as new and desire to secure by letters patent is, in combination with the lamp, the slotted, open, bell-shaped cap, (*i. e.*, the dome,) when so constructed, arranged, and operating as to allow light to be deflected downwards, substantially in the manner and for the purpose herein set forth and explained."

In order to understand how narrow this claim really was, it is necessary to know a little of the history of the art. Two well-known burners are conceded to have been in use before Reichmann's invention, which have a material bearing on his claims; the Vienna burner and Stuber's burner. These have been exhibited to us.

The Vienna burner, shown in Figure 2, contained the flat wick-tube, the ratchet-wheel attached thereto (but covered and not exposed as in Reichmann's,) and a slotted dome above the wick for the flame to pass through, and a chimney; but the dome was not supported by slender arms, as in Reichmann's, but was connected with a gallery, which supported the chimney and surrounded the wick-tube and dome, and rested on the lamp or cap below, so that all the light of the flame below the dome was inclosed and lost and could not issue out as in Reichmann's burner. The drawing shows the dome (*a.*) the surrounding gallery (*b.*) and the lower part of the wick-tube (*c.*)

The Stuber burner, invented by John Stuber in 1856, and made in considerable quantities in that and the following years at Utica, New York, (shown in Figure 3,) was an improvement on the Vienna burner, in this, that the gallery was so low as to leave a considerable open space under the dome for the reflected light to pass out in a downward direction, and the dome was supported by slender arms (*d.*) but these arms were attached to the gallery and not to a sleeve fitted on to the wick-tube. It differed, therefore, from Reichmann's in these respects: the chimney was supported on a low gallery instead of the dome itself, and the dome was supported by arms (*d.*) attached to this gallery instead of arms attached to a sleeve on the wick-tube.* Therefore, with these burners before us,

*The Figure 4 shows another form of Stuber's invention. In Figure 3 upright strips of metal embrace the exterior of the chimney so as to make it stand steadily. In Figure 4 an ornamental crown piece with large openings, reducing the quantity of

Opinion of the court.

all the invention we can discover in Reichmann's burner is the peculiar mode of supporting his dome by slender arms attached to a sleeve fitted on to the wick-tube, and the elevation of the chimney on the outer edge of the dome. The latter peculiarity, as we have seen, is a defect which rendered the burner nearly useless.

The lamp made and sold by the defendants is substantially exhibited (in a sectional view) in Figure 5, which was patented to L. J. Atwood, October 13th, 1863. The dome and chimney are lifted from their place on the cap of the lamp to show the parts.

The allegation of the complainants that the defendant uses Reichmann's invention of peripheral springs (*m*) around the edge of the dome (*k*) for steadyng his chimney we regard as fallacious. The transformation by a mere trick of words and vague generalities of the arms or supports used by Reichmann to sustain his chimney into peripheral springs may be ingenious, but it cannot stand the test of sober consideration. It is not pretended that Reichmann produced anything more than the arms or supports shown in his original patent, marked *k* in Figure 1. These were mere slips of metal turned up around the edge of the dome, such as had been in common use for a great period of time. All that Reichmann did new in this regard was to elevate his chimney on the top of the dome. This, in fact, rendered his lamp in the main useless, and the defendant does not copy it, but slips his chimney down around the dome and places it on a platform perforated with holes, which rests upon the cap of the lamp and answers to the bottom or floor of Stuber's gallery. He thus surrounds the flame with the chimney below as well as above the dome and prevents it from being extinguished by drafts of air without obstructing the issue of the light from below the dome. In this respect his lamp is more like Stuber's than Reichmann's. It is true that he keeps his chimney from coming in contact with the dome by surrounding the latter with a fine spiral spring or metallic fringe (*m*), but this has no resemblance or analogy to the supporting arms appended by Reichmann to his dome.

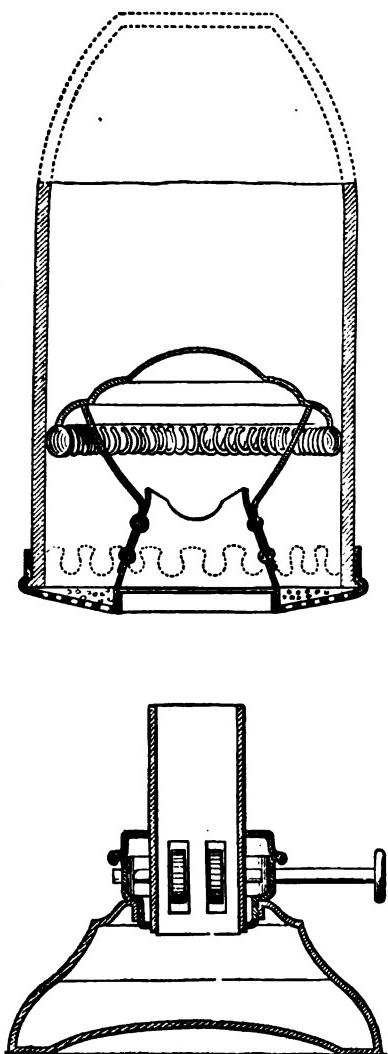
The question whether the defendant's burner which is called the Comet, contains the other peculiarity of Reichmann's burner, namely, the supporting of the dome by slender arms attached directly to a sleeve fitted snugly upon the wick-tube, admits of more discussion. The dome was supported by slender arms both in Stuber's and Reichmann's lamps, but in the former the arms

metal embracing the chimney to not greatly more than what is in the "upright strips of metal," seen in Figure 3, performs the same functions that the last do in the burner illustrated by the said Figure 3.—REP.

Opinion of the court.

were attached to the surrounding gallery on which the chimney rested, and which was slipped over a raised portion of the base (*f*) to which the wick-tube was affixed and there held in place by a bayonet fastening, whilst in Reichmann's burner the arms were attached to a sleeve, fitted directly upon the wick-tube so snugly as to support the dome and chimney firmly and steadily, as before described. Now, in the Comet burner of the defendant, the arms supporting the dome (*k*.) Figure 5, are attached to the platform before mentioned, which answers the place of the gallery floor in Stuber's burner, and the central portion of which is perforated with

Fig. 5.



an opening or slot (*i*) so as to pass down over the wick-tube when being placed on the lamp; around this slot or opening the platform is raised next to the wick-tube in a conical form (*g*.) so that the top edge of the raised part touches the wick-tube, and thus helps to give steadiness to the dome and chimney. The arms are attached to this raised part. But this raised portion of the platform is very far from being Reichmann's sleeve, which was a peculiar characteristic in his lamp, and the sleeve arrangement was all that Reichmann pretended to have produced. Its generalization in the reissued patent is simply effected by a dexterous use of words and vague generalities. We are constrained to hold, therefore, that the Comet burner is not an infringement of Reichmann's original patent or of the invention which is exhibited in his original specification.

It is proper next to inquire as to the bearing of the reissued patent on the question in litigation between the parties. The defenses made by the defendant against this reissue are, first,

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that it was obtained illegally, wrongfully, and by false pretenses, and because it seeks to claim things of which Reichmann was not the original and first inventor; secondly, that the original patent itself was void, because the only thing in it which Reichmann had any pretense of inventing was anticipated by a man by the name of Michael Collins, as early as 1843.

The specification of the reissued patent describes the burner of Reichmann substantially as was done in the original patent, being interspersed, however, with observations as to the uses and objects of particular parts, evidently borrowed from subsequent experience and events. The single claim of the original patent is expanded into seven distinct claims. The first three of these claims, taken with the qualifications which they contain, and limited as they must be by the state of the art at the time when the original patent was applied for, amount to precisely the same thing and to no more than the one claim of the original patent. The first is for a combination of only two elements, it is true, the flat wick-tube and the dome, which combination is found in both the Vienna and Stuber burners; but a qualification is added, that the combination is to be "under the *arrangement* substantially as shown and described, so that, *while directly connected with each other*, the said parts shall allow light to pass out or be reflected from between them as set forth." Thus it is made essential to the invention here claimed, not only that the two elements named should be present, but that they should have the arrangement described in the patent, and should have a direct connection with each other, and that the light should be reflected from between them. All these things exist in the Stuber burner except one. In that burner the wick-tube and the dome are not directly connected together. The dome is first connected with the gallery and the gallery with the wick-tube. So that the claim is reduced to the same thing which was claimed in the original patent. The same may be said of the second and third claims. If they mean anything more than the claim in the original patent they are void. Being identical with that they are needlessly multiplied, and by exhibiting a seeming of claims to which Reichmann was not entitled they are calculated to confuse and mislead. We think it proper to reiterate our disapprobation of these ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalizations and ambiguous language to discourage further invention in the same department of industry and to cover antecedent inventions. Without deciding that a repetition of substantially the same claim in different words will vitiate a

Opinion of the court.

patent, we hold that where a specification by ambiguity and a needless multiplication of nebulous claims is calculated to deceive and mislead the public, the patent is void.

The fourth claim was clearly anticipated by the burner of Stuber. It is in the following words:

"A lamp-burner composed of two groups of elements, the first consisting of the base with its wick-tube and wick-adjusting rack and pinions; the second of a chimney-holder, deflector, and such other parts as may be needed for the proper combustion of the fluid so as to produce an illuminating flame, the two groups being united by friction, and the latter when in position in the burner being supported by the former without the intervention of any mechanical device whereby the two may be rigidly connected together, substantially as and for the purposes herein shown and set forth."

Everything here claimed is found in Stuber's burner. If this claim is valid Stuber could be enjoined. The addition of a bayonet fastening by Stuber does not destroy the identity of his lamp with the alleged invention described in this claim. It follows that this claim is void for this reason, without reference to other objections which have been suggested in relation to it. One void claim, however, does not vitiate the entire patent, if made by mistake or inadvertence and without any willful default or intent to defraud or mislead the public. Giving to the complainants the whole benefit of this indulgence there is still nothing in the remaining claims which the defendant is called upon to answer. They are merely for combinations of parts in the original burner of Reichmann which the defendant does not use unless the pretense of a claim to peripheral springs as distinguished from Reichmann's arms and supports can be sustained. We have already seen that this cannot be done.

Our conclusion, therefore, is that the Comet burner is no infringement of Reichmann's reissued patent so far as that patent is valid.

This view of the case makes it unnecessary to discuss the question relating to the alleged invention of Collins. Whilst his conduct and testimony and that of the other witnesses who testify to his invention are susceptible of much criticism, we think it proper to say that we should feel great difficulty in disregarding it altogether. If the models presented by him were really his invention at the time sworn to, the Reichmann patent has no foundation whatever to stand on. But waiving the discussion of this question

Opinion of the court.

we feel bound to affirm the decree of the Circuit Court for the reasons above stated.DECREE AFFIRMED.

COFFIN v. OGDEN.

(18 Wallace, 120.)

1. When, in a patent case, a person claims as an original inventor and the defense is a prior invention by the defendant, if the defendant prove that the instrument which he alleges was invented by him was complete and capable of working, that it was known to at least five persons, and probably to many others, that it was put in use, tested, and successful, he brings the case within the established severe tests required by law to sustain the defense set up.
2. Barthol Erbe anticipated William S. Kirkham in the invention of door locks with reversible latches.

APPEAL from the Circuit Court for the Southern District of New York, in which court Coffin filed a bill against Ogden *et al.* to enjoin them from making door locks of a certain kind, the exclusive right to make which he alleged belonged by the assignment of a patent right to him.

The case was one chiefly of fact, involving the question of priority of invention. The court below was of the opinion that the complainant, or rather the person under assignment of whose patent he claimed and was working, had been anticipated in his invention; and dismissed the bill. From that decree the defendants took this appeal.

Mr. George Gifford, for the appellant; Mr. B. F. Thurston, contra.

Mr. Justice SWAYNE stated the case, recited the evidence, and delivered the opinion of the court.

The appellant was the complainant in the court below, and filed this bill to enjoin the defendants from infringing the patent upon which the bill is founded. The patent is for a door lock with a latch reversible, so that the lock can be applied to doors opening either to the right or the left hand. It was granted originally on the 11th of June, 1861, to Charles R. Miller, assignee of William S. Kirkham, and reissued to Miller on the 27th of January, 1863. On the 10th of June, 1864, Miller assigned the entire patent to the complainant. No question is raised as to the complainant's title, nor as to the alleged infringement by the defendants. The answer alleges that the thing patented, or a material and substantial part thereof, had been, prior to the supposed invention thereof by Kirk-

Opinion of the court.

ham, known and used by divers persons in the United States, and that among them were Barthol Erbe, residing at Birmingham, near Pittsburg, and Andrew Patterson, Henry Masta, and Bernard Brossi, residing at Pittsburg, and that all these persons had such knowledge at Pittsburg. The appellees insist that Erbe was the prior inventor, and that this priority is fatal to the patent. This proposition, in its aspects of fact and of law, is the only one which we have found it necessary to consider.

Kirkham made his invention in March, 1861. This is clearly shown by the testimony, and there is no controversy between the parties on the subject.

It is equally clear that Erbe made his invention not later than January 1st, 1861. This was not controverted by the counsel for the appellant; but it was insisted that the facts touching that invention were not such as to make it available to the appellees, as against the later invention of Kirkham and the patent founded upon it. This renders it necessary to examine carefully the testimony upon the subject.

Erbe's deposition was taken at Pittsburg upon interrogatories agreed upon by the parties and sent out from New York. He made the lock marked H. E. (It is the exhibit of the appellees, so marked.) He made the first lock like it in the latter part of the year 1860. He made three such before he made the exhibit lock. The first he gave to Jones, Wallingford & Co. The second he sent to Washington, when he applied for a patent. The third he made for a friend of Jones. He thinks the lock he gave to Jones, Wallingford & Co. was applied to a door, but is not certain.

Brossi. In 1860 he was engaged in lock-making for the Jones and Nimmick Manufacturing Company. He had known Erbe about seventeen years. In 1860 Erbe was foreman in the lock shop of Jones, Wallingford & Co., at Pittsburg. In that year, and before the 1st of January, 1861, he went to Erbe's house. Erbe there showed him a lock, and how it worked, so that it could be used right or left. He says: "He (Erbe) showed me the follower made in two pieces. One piece you take out when you take the knob away. The other part—the main part of the follower—slides forward in the case of the lock with the latch, so you can take the square part of the latch and turn it around left or right, whichever way a person wants to." He had then been a lock-maker eight years. He examined the lock carefully. He had never seen a reversible lock before. He has examined the exhibit lock. It is the same in construction. The only difference is, that the original lock was made of rough wrought iron. It was a complete lock,

Opinion of the court.

and capable of working. Erbe thought it a great thing. Erbe showed him the lock twice afterwards at Jones, Wallingford & Co's. He saw such a lock attached to the office door there and working, but don't know whether it was the first lock made or one made afterwards.

Masta. In 1860 he was a pattern-maker for Jones, Wallingford & Co. Had known Erbe fourteen or fifteen years. Erbe showed him his improvement in reversible locks New Year's day, 1861. He examined the lock with the case open. "You had to pull out the spindle, and the hub was fitted so that it would slide between the spindle and the plate and let the latch forward." . . . "The whole hub was made of three pieces. One part was solid to the spindle or hub shanks, and then the hub that slides between the plate and case, and a washer at the other side of the spindle." "There is not a particle of difference between the exhibit and the original lock. It is all the same." He identifies the time by the facts that he commenced building a house in 1861, and that year is marked on the water conductor under the roof.

Patterson. Until recently he was a manufacturer of locks and other small hardware. In the year 1860 he was the superintendent of the lock factory of Jones, Wallingford & Co., and their successors in Pittsburg. He had known Erbe since 1856. About the 1st of January, 1861, Erbe showed him an improved reversible lock of his invention like the exhibit lock. The improvement "consisted in constructing the hub or follower so that when the spindle was withdrawn the hub would slide forward between the cases so that the head of the latch would protrude beyond the face of the lock, so as to permit its reversal from right to left; the latch-head being connected with the yoke by a swivel joint, so that it might be reversed. . . . It was our uniform practice to put our new locks on the doors about the office to test them, and I believe that one was put on; but at this distance of time I cannot say positively that it was."

There is no proof that Erbe made any locks according to his invention here in question but those mentioned in his testimony. He applied for a patent in 1864, and failed to get it. Why, is not disclosed in the record.

The appellants called no witnesses at Pittsburg or elsewhere to contradict or impeach those for the appellees. Brossi was subjected to a rigorous cross-examination; but, in our judgment, it in nowise diminishes the effect of his testimony in chief. The counsel for the appellants asked with emphasis, in the argument here, why the defendants had not called Jones, of the firm of Jones,

Opinion of the court.

Wallingford & Co.? The question was well retorted, why was he not called by the other side? He does not appear in a favorable light. He prevented Erbe, who was in his employ, from going to New York to testify in behalf of the defendants, and avowed a determination to prevent, if it were possible, their obtaining the testimony of Brossi, Masta, and Patterson. It is difficult not to regard him with a feeling akin to that which attends the presumptions *in odium spoliatoris*. We entertain no doubt that the testimony of all these witnesses is true in every particular, including the statement of Bossi as to putting the lock on the door. If that were false, doubtless Jones would have been called to gainsay it. His hostility to the defendants is a sufficient reason for their not calling him for any purpose.

The case arose while the Patent Act of 1836 was in force, and must be decided under its provisions. The sixth section of that act requires that to entitle the applicant to a patent, his invention or discovery must be one "not known or used by others before his invention or discovery thereof." The fifteenth section allowed a party sued for infringement to prove, among other defenses, that the patentee "was not the original and first inventor of the thing patented, or of a substantial and material part thereof claimed to be new."

The whole act is to be taken together and construed in the light of the context. The meaning of these sections must be sought in the import of their language, and in the object and policy of the legislature in enacting them. *Gayler v. Wilder*, 10 Howard, 496. The invention or discovery relied upon as a defense must have been complete, and capable of producing the result sought to be accomplished; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him. If the thing were embryotic or inchoate, if it rested in speculation or experiment, if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view. The law requires not conjecture, but certainty. If the question relate to a machine, the conception must have been clothed in substantial forms which demonstrate at once its practical efficacy and utility. *Reid v. Cutler*, 1 Story, 590. The prior knowledge and use by a single person is sufficient. The number is immaterial. *Bedford v. Hunt*, 1 Mason, 302. Until his work is done, the inventor has given nothing to the public. In *Gayler*

Statement of the case.

v. Wilder the views of this court upon the subject were thus expressed: "We do not understand the Circuit Court to have said that the omission of Conner to try his safe by the proper tests would deprive it of its priority; nor his omission to bring it into public use. He might have omitted both, and also abandoned its use and been ignorant of the extent of its value; yet if it was the same with Fitzgerald's, the latter would not, upon such grounds, be entitled to a patent; provided Conner's safe and its mode of construction were still in the memory of Conner before they were recalled by Fitzgerald's patent." Whether the proposition expressed by the proviso in the last sentence is a sound one, it is not necessary in this case to consider.

Here it is abundantly proved that the lock originally made by Erbe "was complete and capable of working." The priority of Erbe's invention is clearly shown. It was known at the time to at least five persons, including Jones, and probably to many others in the shop where Erbe worked; and the lock was put in use, being applied to a door, as proved by Brossi. It was thus tested and shown to be successful. These facts bring the case made by the appellees within the severest legal tests which can be applied to them. The defense relied upon is fully made out.

DECREE AFFIRMED.

EUNSON v. DODGE.

(18 Wallace, 414.)

Where a person during the original term of a patent bought from one who had no right to sell it, a machine which was an infringement of the patent, and afterwards himself bought the patent for the county where he was using the machine, held that on an extension of the patent the owners of the extension could not recover against him for using the machine after the original term had expired; but that such purchase of the interest in the patent, removed, as to the purchaser, all disability growing out of the wrongful construction of the machine then used by him, and rendered the use of it legal.

APPEAL from the Circuit Court for the Southern District of New York; the case being this:

On the 23d of May, 1854, the United States granted to Myers *et al.* a patent for a sawing machine for fourteen years, in other words, till the 23d of May, 1868.

About two years after the grant of the patent, that is to say, in April, 1856, the patentees assigned to one Schureman, for himself, his legal representatives and assigns, all their right, title, and in-

Argument for the appellants.

terest in and to the same for, in, and to Hudson county, New Jersey, to the end of the term for which the patent had been granted.

In May, 1865, and subsequently to the assignment just mentioned, Dodge & Co., a firm of the same Hudson county, New Jersey, already mentioned, bought from strangers *who had no right or license to make or vend it* a sawing machine which was an infringement of the patent. Dodge & Co. used this machine for about fifteen months, in good faith and without knowledge that it was an infringement. When receiving notice from Schureman that it was so, and that he was assignee of the patent for Hudson county, they, on the 22d of September, 1866, purchased of him the letters and all his right and interest therein for the said county. This invested them, of course, with all the rights of the patentee, for Hudson county, during the term of the patent, in other words, till the 23d of May, 1868.

On the 13th of May, 1868, after the transfer by the patentees to Schureman and by him to Dodge & Co., the patent was extended to Myers and the other patentee, from the 23d of May, 1868, until the 23d of May, 1875.

Their right in this extension these parties transferred to Eunson *et al.*

Hereupon, in July, 1871, these last-named parties finding that Dodge & Co. were still using this machine, originally made as already said, *without license and unlawfully*, and conceiving that in thus using it, after the date when the original patent had expired and in the term of the extension which had been assigned to them, Dodge & Co. were infringing their rights, filed this bill to enjoin the use and to recover compensation.

Dodge & Co. set up that they were protected in the use of the machine by the terms of the eighteenth section of the Patent Act of July 4th, 1836. That act, after providing for renewals or extensions, enacts that—

“The benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented, to the extent of their interest therein.”

The court below held that the defendants were thus protected, and a decree having been given accordingly, the complainants brought the case here.

Mr. F. H. Betts, for the appellants:

We concede that if the defendant's machine had been one which was *lawfully* constructed by or purchased from the patentees or their assignees, the defendants would be protected under the rule

Opinion of the court.

established in *Wilson v. Rousseau*, 4 Howard, 646, and other cases in this court. *Bloomer v. McQuewan*, 14 Id., 539; *Chaffee v. Boston Belting Company*, 22 Id., 217, 223; *Bloomer v. Millinger*, 1 Wallace, 340.

This rule is founded upon the doctrine stated in one of these cases, (*Chaffee v. Boston Belting Company*), that the patentee should "be entitled to but one royalty for a patented machine, and consequently when a patentee has himself constructed the machine, or authorized another to construct and sell it, or to construct and use and operate it, and the consideration has been paid to him for that right, he has then to that extent parted with his monopoly and ceased to have any interest in the machine." By the lawful sale of a machine, the right to use it has passed to the purchaser in perpetuity, or so long as the machine exists.

But this case is distinguished from the cases referred to by the absence of the very fact that in each of those cases brought these defendants within the permission of the statute, viz, the fact that the machine had been "lawfully made," and the patentee had sold it, and with it *ipso facto* the perpetual right to use it; in the present case the defendant's machine was not "lawfully made." It was "built and sold without right or license under said patent." The patentees never have been paid for the perpetual right to use it. The defendants, therefore, do not come within the terms of the eighteenth section, as construed by this court.

Mr. S. D. Law, contra.

Mr. Justice HUNT delivered the opinion of the court.

This court has decided many times that the eighteenth section of the Patent Act of 1836 gives to an assignee of the patent during the original term the right to continue during the extended term the use of a machine used by him during the original term. *Wilson v. Rousseau*, 4 Howard, 646; *Bloomer v. McQuewan*, 14 Id., 539; *Chaffee v. Boston Belting Company*, 22 Id., 217; *Bloomer v. Millinger*, 1 Wallace, 340.

The complainants seek to distinguish the present from the cases cited in this manner: In those instances they say the machines were lawfully constructed by the patentees, or purchased from the patentees or their assigns, whereas the machine purchased by the defendants in this case was not a lawfully-made machine, and was never purchased from the owner of the patent.

We are of the opinion that this distinction is not well taken. That the purchase of the machine was made from an infringer, and

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a wrong done, is true. When informed of the offense, the purchaser at once corrected the evil by purchasing the entire right of the patentees for the county where his machine was then used, and where it has since been used. This was equivalent to an original lawful purchase or manufacture of the machine. By the purchase of the right for Hudson county, and from the moment of that purchase, the defendants held and used the machine by a lawful title, as perfect and complete against the patentees as if the original purchase had been from them. They then became, in the language of the statute, "grantees of the right to use the thing patented," so continued to the time of the expiration of the original patent, and the right so to use was, in the further language of the statute, "the extent of their interest therein."

We are of the opinion that the decree of the Circuit Court was correct, and that it should be

AFFIRMED.

Mr. Justice STRONG took no part in this judgment, not having sat in the case.

HICKS v. KELSEY.

(18 Wallace, 670.)

The mere change in an instrument or machine of one material into another—as of wood, or of wood strengthened with iron, into iron alone—is not "invention" in the sense of the Patent Acts, and therefore is not the subject of a patent; the purpose and means of accomplishment, and form and mode of operation of each instrument—the new as of the old—being each and all the same. The mere fact that the new instrument is a better one than the old one—requiring less repair, and having greater solidity than the old one, does not alter the case. It does not bring the case out of the category of more or less excellence of construction.

APPEAL from the Circuit Court for the Northern District of Illinois; the case being this:

Hicks obtained a patent for an improved wagon-reach, and filed a bill against Kelsey, charging infringement and praying the usual relief. The defendant answered, denying the novelty of the alleged invention, and also denying infringement.

The thing called a "wagon-reach"—that is to say, a pole or shaft connecting the front and rear axles of wagons or carriages, and having an upward crook or curve in it, so as to allow the front wheel, which, when a carriage is turned, goes against the reach if straight, to pass under it—had confessedly long been made, and was public property. These had been made of wood, necessarily for the sake of strength of a certain thickness, and consisted of one

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piece, strengthened by straps of iron attached to each side of the reach. The supposed improvement of the plaintiff consisted precisely and only in leaving out the wood in *the curve* and bolting the iron straps together, whereby the curve became all iron and less bulky, but in all other respects having the same shape and performing the same office as before. About all this there was no dispute whatever. Instead of being bolted together, the straps might be welded so as to make the curve consist of solid iron.

The question was whether this change of material—making the curve of iron instead of wood and iron—was a sufficient change to constitute invention—the purpose being the same (namely, to turn the wheel under the body of the wagon,) the means of accomplishing it being the same, (namely, by a curved reach,) and the form of the reach and mode of operation being the same.

Witnesses were examined, whose testimony went to show that the iron reach had advantages over those of mere wood, or of wood and iron. One said that of thirty-five, which he had made in about two years, none had come back broken or needing repairs; that this was not the case with the old sort.

Another said:

“My experience is that, in those made of wood and iron, the wood between the iron plates in summer contracts and loosens the bolts.”

Another said:

“Hicks’s reach being iron, the two plates come together as one whole substantially soldered. In the wooden one, the moment the shrinkage becomes such that the bolts become loose, each has to take its own part, and the transit of the trucks, moving from the right to the left, turning the friction from that, takes each separate strain from one and throws it on to the other, so it makes only the thickness of the one side—the one piece of iron—where otherwise it would be two plates together. The crooked part, right at the crook, would break, according to that arrangement, because the other part is stronger. It will break whenever it gets so it will vibrate, at the weakest point.”

The court below decided that plainly there was nothing but a change of material, and that this—the purpose, means of accomplishment, form of the instrument, mode of operation, being all as in the old reach—was not a sufficient change to constitute invention. It accordingly dismissed the bill. From its action herein this appeal was taken.

Argument for the patentee.

Mr. S. A. Goodwin, for the appellant:

This invention does not consist in the *mere* substitution of a particular material for other material which had been previously used for the same purpose and in the same way. The invention consists in the production of a certain described article by a certain described mechanical process, which process, viewed as a whole, is new in itself. That process is, the making an ordinary wooden reach of two separate parts, in splicing those parts at the front and rear ends by a particular and new mechanical arrangement to a curved metallic intermediary splice, made substantially solid in two plates, or one casting, so that a new article is produced by a new mechanical arrangement or device—a new curved reach. This article has added advantages and increased utility over the old wooden curved reach improved upon. They are shown in the proofs. Indeed, the matter is intelligible without proofs. The *curved* reach is indispensable, to prevent the wheel, when the carriage is turned and one of the front wheels put under it, from rubbing against the reach, lifting it up, and upsetting the carriage. But a curved reach must be made. One is rarely found in the natural growth of a tree. The curved part, when made, is necessarily weak, being usually made of wood sawed across the grain. To give strength the whole wooden reach has iron plates along it, fastened on both its sides with spikes or bolts. The wood and the iron shrink unequally, and the bolts all become loose. But when the central part is *all* made of iron alone, leaving the ends, for the sake of lightness, to be of wood alone, all this is obviated.

We say, then, that this *new material* in the crook or curve; with the *new method of attachment* at each end (the splice) to the two wooden parts; with the *new construction* of the reach as a whole; with the *new operation* in consequence of the change; with the *increased utility* and *beneficial results*, thus uncontestedly proved, bring this patent within the principle of all the cases as a patentable invention.

There are many cases in which the materiality of an invention, whether it be a machine or a process, can be judged of only by its effect on the result, and this effect is tested by the actual improvement in the process of producing an article, or in the article itself introduced by the alleged invention. *Roberts v. Dickey*, 4 Fisher, 532, per Strong, J.; and see *McCormick v. Seymour*, 2 Blatchford, 243—definition of a patentable subject, by Nelson, J.

No opposing counsel.

Opinion of the court.

Mr. Justice BRADLEY, having stated the case, delivered the opinion of the court.

The question is whether the mere change of material—making the curve of iron instead of wood and iron—was a sufficient change to constitute invention; the purpose being the same, the means of accomplishing it being the same, and the form of the reach and mode of operation being the same.

It is certainly difficult to bring the case within any recognized rule of novelty by which the patent can be sustained. The use of one material instead of another in constructing a known machine is, in most cases, so obviously a matter of mere mechanical judgment, and not of invention, that it cannot be called an invention, unless some new and useful result, an increase of efficiency, or a decided saving in the operation, is clearly attained. Some evidence was given to show that the wagon-reach of the plaintiff is a better reach, requiring less repair, and having greater solidity than the wooden reach. But it is not sufficient to bring the case out of the category of more or less excellence of construction. The machine is the same. Axe-helves made of hickory may be more durable and more cheap in the end than those made of beech or pine, but the first application of hickory to the purpose would not be, therefore, patentable.

Cases have frequently arisen in which substantially the question now presented has been discussed. Perhaps, however, none can be cited more directly in point than that of *Hotchkiss v. Greenwood*, 11 Howard, 248, in which it was held that the substitution of porcelain for metal in making door-knobs of a particular construction was not patentable, though the new material was better adapted to the purpose and made a better and cheaper knob—having been used for door-knobs, however, before. So, in a case at the circuit, referred to by Justice Nelson in the last-named case, (Ib., 266,) the substitution of wood for bone as the basis of a button covered with tin was held not patentable.

In *Crane v. Price*, Webster's Patent Cases, 409, it is true, the use of anthracite instead of bituminous coal with the hot-blast in smelting iron-ore was held to be a good invention, inasmuch as it produced a better article of iron at a less expense. But that was a process of manufacture, and in such processes a different article replacing another article in the combination often produces different results. The latter case is more analogous to the cases of compositions of matter than it is to those of machinery; and in compositions of matter a different ingredient changes the identity of the compound, whereas an iron bar in place of a wooden one, and sub-

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serving the same purpose, does not change the identity of a machine. See Curtis on Patents, 3d edition, §§ 70-73.

But the plaintiff's counsel alleges that his invention does not consist of the mere substitution of a particular material for another material which had been previously used for the same purpose in the same way, but consists in the production of a certain described article by a certain described mechanical process, which process, viewed as a whole, is new and useful; and then he describes what he supposes to be such new mechanical process. This is his argument; but the facts do not bear out such a view of the case.

In our judgment, the patent in this case is void for want of novelty in the alleged invention.

DECREE AFFIRMED.

MITCHELL v. TILGHMAN.

(19 Wallace, 287.)

What R. A. Tilghman, of Philadelphia, claimed as his invention under the letters patent granted to him of January 9th, 1854, was the process of manufacturing fat-acids and glycerin from fatty or oily substances by the action of water at a high temperature and pressure.

Two conditions, viz, that the heating vessel must be kept entirely full of the mixture of fat and water, and that no steam or air must be allowed to accumulate in the vessel employed to impart the heat, were material and indispensable conditions of Tilghman's patented method.

The claim of the patentee must be limited to the specific method or means of applying highly heated water under pressure pointed out in the specification; and although the claim is on its face broader than this, yet it is to be construed by reference to the specification.

In this point of view it is unimportant whether the claim contained any direct reference to the specification or not. Such reference, where not expressed, will be implied.

The precise apparatus described in Tilghman's specification does not appear to have gone into practical use in this country or in Europe, and the apparatus worked by Tilghman's licensees differs in many material respects from the apparatus described in his patent, and taken as a whole, therefore, it was considered by this court that Tilghman did not succeed in introducing his invention into practical use by the means and mode of operation described in his specification.

Accordingly, where a defendant had used highly heated water in a close vessel, but used a much more moderate degree of heat than specified by Tilghman, and used an entirely different apparatus from Tilghman's, and one which permitted the existence of steam as well as water—construing Tilghman's claim of invention as limited by the specific means and mode of operation described in his specification—such defendant was held not to have infringed.

APPEALS from the Circuit Court for the Southern District of New York, in which court R. A. Tilghman filed two bills in equity

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against R. G. Mitchell, under a patent granted to him, the said Tilghman, for a process for making fat-acid and glycerin from natural fat; one bill having been filed during the first term of the patent, and the other under the extended term of the same patent.

In both cases final decrees were given in favor Tilghman; and the defendant, Mitchell, took these appeals.

The bill set forth the grant of letters-patent to Tilghman, October 3d, 1854, for fourteen years from January 9th, 1854, the reduction of the patented improvement to use, and the infringement by Mitchell.

The invention claimed by Tilghman may be stated, in general terms, to be based upon the discovery that if water be heated to a high degree, and at the same time retained in a close vessel so that it cannot pass into the state of steam, but must remain in the liquid state, it will, while in such highly heated liquid state, possess a peculiar property of separating natural fat into its chemical constituents, glycerin and fat-acids. He undertook to claim the employment of water *in the liquid state, heated and under the pressure* necessary to retain it in the liquid state as *the decomposing agent*. He asserted that prior to his discovery and invention, no one had ever known, used, or described the employment of *highly heated water retained in the liquid state by pressure* as such decomposing agent, and that under the law if he set forth this newly discovered decomposing power of *liquid water heated and under pressure*, and exhibited in his specification one mode of practically applying it, he was entitled to the exclusive use of this decomposing agent in treating fats for the purpose of separating them into fat-acids and glycerin.

To understand the questions at issue in this case, and passed upon by the court, there is first to be considered the phenomenon of heating water, &c., its behavior and properties when heated.

Water when heated in an open vessel at the surface of the earth passes into a state of vapor, at a temperature of 212° of Fahrenheit's thermometer; the waters expanding over eighteen hundred times in passing into steam. It is impossible to retain water in a liquid state, in an open vessel, after it has reached that temperature. If the vessel in which the water is heated, however, be covered, and the cover be fastened down, the water can be heated to any temperature whatever, and will still remain in the liquid state. The tendency of the water to pass into vapor increases with the degree of heat applied to it, and there must, therefore, be a proportionate pressure or restraint by the inclosing vessel on the heated

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water to overcome this expansive tendency, or tendency to pass into a state of vapor.

Vessels in which water could be heated to any desired temperature, and the water still retained in the liquid state, were known in the arts, and called "digesters."

To understand matters further a brief statement of the art of treating fat is necessary.

Fats obtained from various sources differed much in hardness and fusibility, and each variety was formerly supposed to be an entirely different article. About 1816, Braconnot, a French chemist, discovered that all natural fats were merely *mechanical mixtures*, in various proportions of fats entirely solid and hard, now called stearin, with a more fluid fat or oil, called olein. He found that simple pressure very slowly applied, squeezed out the more fluid part, and that the remainder made harder candles. But the process of separation by pressure was difficult and imperfect.

Chevreul, in 1825, discovered that all fats were *chemical compounds* of a substance called glycerin, with fatty bodies having slight acid characters called fatty acids; that fatty acids were of different degrees of fusibility, and that when the glycerin was separated from fats, the fatty acids could be more rapidly and perfectly pressed so as to get out the hardest fatty acids for candles; and he patented a chemical process of separating these fatty acids from glycerin.

His process consisted of two distinct stages:

1. The manufacture of natural fat into *soap*, by boiling lime or other alkali with the fat, in which case fourteen pounds of lime were used to one hundred pounds of fat.

2. The decomposition of the soap so produced into fat-acid by the use of two pounds of sulphuric acid to each pound of lime.

Soap had always previously been made by boiling the fat and solution of alkali together, and Chevreul suggested that this production of *soap* could be expedited by boiling the fat and the solution of alkali together *under pressure*. He did not, however, suggest that *water alone*, heated and under pressure, would of itself decompose neutral fat into fat-acid and glycerin, but expressly mentioned alkali and sulphuric acid as the decomposing agents.

Another mode of separating free fat-acids was devised, which was called *decomposition by sulphuric acid distillation*.

This process was invented and used for producing *fat-acid only*, and not glycerin; the glycerin being *destroyed* by the process. It was asserted by Tilghman that this process differed from his:

1. In that the result produced was different, viz., fat-acid only,

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while his, Tilghman's, produced simultaneously both fat-acid and glycerin;

2. In that it required sulphuric acid to decompose the fat into fat-acid;
3. In that it did not depend for its efficiency on the use of *highly heated water* in the liquid state, retained in such state by pressure;
4. In that it was a process of distillation.

We must view here also the *attempted decomposition by steam*.

It was from time to time attempted, prior to Tilghman's alleged invention, to decompose neutral fat into fat-acid by *distillation* in a current of steam, but it was asserted by Tilghman that it was an unsuccessful and abandoned experiment, and had never come into use; and that even if it had been successful it differed in every way from his process. Among other ways,

In not producing glycerin as a result;

In not depending upon, or even allowing of, the presence of highly heated *water* under pressure;

In that it was a process depending on vaporization and subsequent condensation of the fat-acids;

In that the apparatus absolutely *necessary* for the distillation process was such as to render the execution of the hot-water process of him, Tilghman, in the same utterly *impossible*.

Tilghman asserted that he had made the discovery—not that *heat alone* would decompose fats into fat-acid and glycerin, nor that the presence of water was necessary when chemicals are used to decompose fats into fat-acid and glycerin—but merely that *water in a liquid state*, heated to a high degree of temperature while inclosed in a strong vessel, so as to prevent its passing into steam, would of itself and without the aid of chemicals separate natural fat into its constituent elements, fat-acids and glycerin. Having made, as he alleged, this discovery of a new chemical decomposing property of *water highly heated and retained in the liquid state* by pressure, Tilghman, in his patent, announced it, and, as will be seen directly, also described two modes of carrying out his process based thereon.

In the alkaline saponification processes, which were in use prior to Tilghman's invention, various forms of closed boilers, provided with safety valves, were known. It was also known that fat and water would tend to remain unmixed in a boiler, and therefore agitators or circulators, for preserving a mixture or intimate contact between the fat and lime and water during the process of alkaline saponification, under pressure, were also in use.*

* Testimony in the case showed a great variety of these things, the common barrel

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The specification, in the patent, ran thus:

"Be it known that I, Richard Albert Tilghman, of Philadelphia, have invented a new and improved mode of treating fatty and oily bodies, and I hereby declare that the following is a full and exact description thereof:

"My invention consists of a process for producing free fat-acids and solution of glycerin from those fatty and oily bodies of animal and vegetable origin which contain glycerin as their base. For this purpose, *I subject these fatty or oily bodies to the action of water at a high temperature and pressure*, so as to cause the elements of those bodies to combine with water, and thereby obtain at the same time free fat-acids and solution of glycerin. I mix the fatty body to be operated upon with from a third to a half of its bulk of water.

"And the mixture *may* be placed in any convenient vessel in which it can be heated to the melting point of lead, until the operation is complete. The vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam.

"The process may be performed more rapidly and also continuously by causing the mixture of fatty matter and water to pass through a tube or continuous channel, heated to the temperature already mentioned, the requisite pressure for preventing the conversion of water into steam being applied during the process; and this, *I believe*, is the best mode of carrying my invention into effect.

"In the drawing hereunto annexed are shown figures of an apparatus for performing this process speedily and continuously, but which apparatus *I do not intend to claim as any part of my invention*.

"Figure 1 of the said drawing is a vertical section of this apparatus, and Figure 2 shows the various parts of the apparatus in horizontal section; similar parts in these figures being marked with similar letters of reference.

"I place the fat or oil in a fluid state in the vessel, A, with from one third to one half its bulk of warm water; the disk or piston, B, perforated with numerous small holes, being kept in rapid motion, up and down, in the vessel, A, causes the fat, or oil and water,

churn being one of the simplest and best known. De Milley's vertical boiler, with an agitator going up and down, used A. D. 1834, was another form. Alliott's vertical boiler, with centrifugal pump to draw water from bottom and to spread it on the top, used A. D. 1851, was another. Radley & Meyer's revolving mechanical agitator, used A. D. 1851, in a closed boiler having a safety-valve, was yet another. The automatic circulation by the ascending power of a column of heated water, it was testified, was used in an apparatus of Floyd, A. D. 1795.

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to form an emulsion, or intimate mechanical mixture. A force-pump, C, like those in common use for hydraulic presses, then drives the mixture through a long coil of very strong iron tube, D, D, D, D, which, being placed in the furnace, E, E, E, E, is heated by a fire, F, to about the temperature of melting lead. From the exit end, G, of the heating tubes, D, D, D, D, the mixture, which has then become converted into free fat-acids and solution of glycerin, passes on through another coiled iron tube, H, H, H, immersed in water, by which it is cooled down from its high temperature to below 212° Fahrenheit, after which it makes its escape through the exit-valve, I, into the receiving vessel.

Fig. 1.

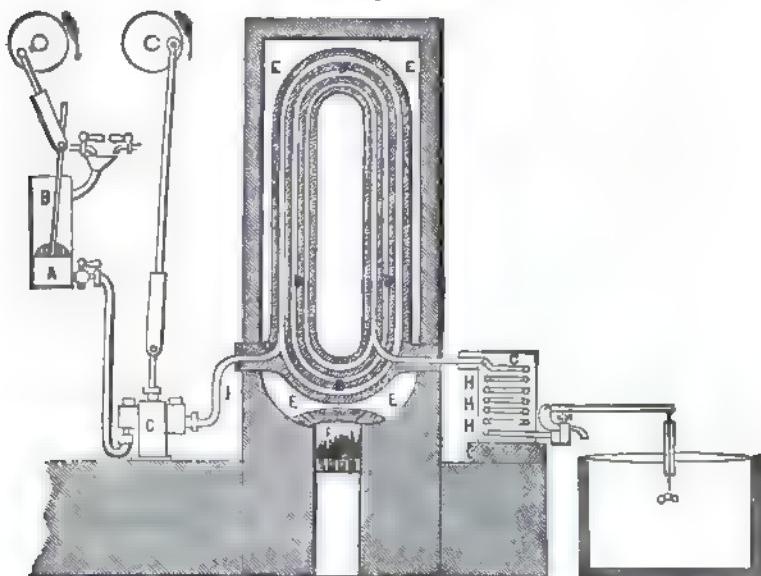
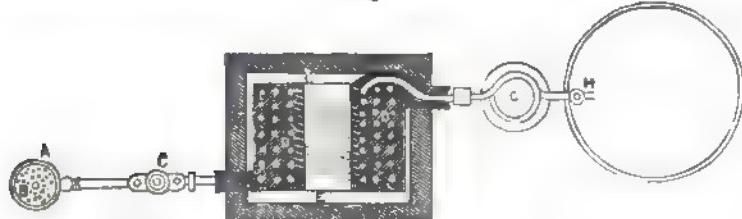


Fig. 2.



"The iron tubes I have employed and found to be convenient for this purpose are about one inch external diameter, and about half an inch internal diameter, being such as are in common use for Perkins's hot water apparatus. The ends of the tubes are joined together by welding to make the requisite length, but

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where welding is not practicable, I employ the kind of joints used for Perkins's hot-water apparatus, which are now well known. The heating-tube, D, D, D, D, is coiled several times backwards and forwards, so as to arrange a considerable length of tube in a moderate space. The different coils of the tube are kept about a quarter of an inch apart from each other, and the interval between them is filled up solid with cast iron, which also covers the outer coils or rows of tubes to the thickness of half or three quarters of an inch, as shown in Figure 2. This casing of metal insures a considerable uniformity of temperature in the different parts of the coil, adding also to its strength, and protecting it from injury by the fire.

"The exit-valve, I, is so loaded that when the heating tubes, D, D, D, D, are at the desired working temperature, and the pump, C, is not in action, it will not be opened by the internal pressure produced by the application of heat to the mixture; and, therefore, when the pump, C, is not in action, nothing escapes from the valve, I, if the temperature be not too high. But when the pump forces fresh mixture into one end, J, of the heating tubes, D, D, D, D, the exit-valve, I, is thereby forced open to allow an equal amount of the mixture, which has been operated upon, to escape out of the cooling tubes, H, H, at the other end of the apparatus. No steam or air should be allowed to accumulate in the tubes, which should be kept entirely full of the mixture. For this purpose, whenever it may be required, the speed of the pump should be increased, so that the current through the tubes may be made sufficiently rapid to carry out with it any air remaining in them.

"Although the decomposition of the neutral fats by water takes place with *great quickness at the proper heat*, yet I prefer that the pump, C, should be worked at such a rate in proportion to the length or capacity of the heating tubes, D, D, D, D, that the mixture, while flowing through them, should be maintained at the desired temperature for *ten minutes* before it passes into the refrigerator or cooling parts, H, H, of the apparatus.

"The melting-point of lead has been mentioned as the proper heat to be used in this operation, because it has been found to give good results. But the change of fatty matters into fat-acid and glycerin takes place with some materials (such as palm oil) at, or below, the melting-point of bismuth, yet the heat has been carried considerably above the melting-point of lead without any apparent injury, and the decomposing action of the water becomes more powerful as the heat is increased. *By starting the apparatus at a low heat, and gradually increasing it, the temperature giving pro-*

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ducts most suitable to the intended application of the fatty body employed, can easily be determined.

"To indicate the temperature of the tubes D, D, D, D, I have found the successive melting of metals and other substances of different and known degrees of fusibility to be convenient in practice; several holes, half an inch in diameter, and two or three inches deep, are bored into the solid parts of the castings surrounding the tubes, each hole being charged with a different substance. The series I have used consist of tin, melting about 440° F.; bismuth at about 500° F.; lead at about 612° F.; and nitrate of potash at about 660° F. A straight piece of iron wire, passing through the side of the furnace to the bottom of each of the holes, enables the workmen to feel which of the substances are melted, and to regulate the fire accordingly. It is important, for the quickness and perfection of the decomposition, that the oil and water, during their entire passage through the heating tubes, should remain in the same state of intimate mixture in which they enter them. I therefore prefer to place the series of heating tubes in a vertical position, so that any partial separation which may take place, while the liquids pass up one tube, may be counteracted as they pass down the next. I believe that it will be found useful to fix at intervals, in the heating tubes, diaphragms pierced with numerous small holes, so that liquids, being forced through these obstructions with great velocity, may be thoroughly mixed together.

"I deem it prudent to test the strength of the apparatus by a pressure of ten thousand pounds to the square inch, before taking it into use; but I believe that the working pressure necessary in using the heat I have mentioned will not be found to exceed two thousand pounds to the square inch.

"When it is desired to diminish the contact of the liquids with iron, the tubes or channels of the apparatus may be lined with copper. The hot mixture of fat-acids and solution of glycerin which escapes from the exit-valve of the apparatus separates by subsidence. The fat-acids may then be washed with water, and the solution of glycerin concentrated and purified by the usual means.

"The fat-acids thus produced, may, like those obtained by other methods, be used in the manufacture of candles and soaps, and applied to various purposes, according to their quality; and, when desired, they may also be first bleached by chemical agents, or purified by distillation, in a current of steam or in a vacuum, as is now well understood. I prefer that the fatty bodies should be previously deprived, as far as practicable, of such impurities as would

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cause the discoloration of the fat-acids produced; but when the fat-acids are to be finally purified by distillation this preliminary purification is of less importance.

"When the sulphuric acid, nitrous fumes, or other corrosive agent shall have been used for purifying, hardening, or otherwise preparing the fatty body to be operated upon, I take care that all traces of it shall be washed out, or neutralized, before passing it through the apparatus.

"Some fatty bodies (particularly when impure) generate, during the process, a portion of acetic or other soluble acid, which might tend to injure the iron tubes; in such cases, I add a corresponding quantity of alkaline or basic matter to the water and oil before they are pumped into the tubes.

"Having now described the nature of my said invention, and the manner of performing the same, I hereby declare that

"I claim as of my invention, the manufacturing of fat-acids and glycerin from fatty bodies by the action of water at a high temperature and pressure.

"R. A. TILGHMAN."

The answers to the bill of Tilghman, which set forth his patent, denied that Tilghman had applied his improvement to practical use;

Alleged that the manufacturing of fat-acids and glycerin from fatty bodies by the action of water at a high temperature and pressure, cannot be accomplished so as to be practically useful, if it can at all, by the method and apparatus described in said letters patent;

Alleged that all attempts to carry on the manufacture of fatty acids by means of the apparatus and method described in said letters patent had failed;

Denied that the defendant had been using the improvement of Tilghman, or "any method in construction or operation substantially the same, otherwise than was thereafter alleged," but admitted that he "used water at a high temperature and steam, and such pressure as arises from the expansive force of hot water or steam in a close vessel, under and in pursuance of a patent of Wright & Fouché, January 25th, 1859;"

Alleged that "the action of water highly heated in a close vessel upon very many substances to decompose them, and upon fats and oils," was, prior to Tilghman's invention, well known to chemists, &c., and was described in printed publications;

Alleged that before the invention of Tilghman "the use of a close vessel of such strength as to resist the pressure of the water

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when heated, or *any needed pressure* when using water to decompose other substances, was known to and practiced by men of science and manufacturers in the United States and elsewhere;”

Alleged that the said quality of highly heated water thus used is an elementary principle, and *not patentable*;

Alleged that the mode and means described in the specification as the best means of carrying the invention into effect was dangerous, owing to the degree of heat required.

It also referred to numerous prior patents, and contained extracts from publications to show that Tilghman’s invention had been anticipated. Among the extracts were :

1st. Extracts showing use of digesters, for heating water to high temperature and still retaining it in a *liquid state*;

2d. Extracts showing use of digesters for *rendering* raw fat or removing membranous and cellular matter, and thus purifying it;

3d. Extracts from text-books and writers, stating generally that neutral fats can be decomposed into fat-acids and glycerin, and that in the act of decomposition the elements of the water are taken up by the fat-acids and glycerin ;

4th. Extracts to show that alkaline saponification decomposes neutral fat into soap and glycerin, which soap can afterwards be decomposed into fat-acid; and also to show that the *alkaline saponification* can be better effected in a close vessel under pressure ;

5th. Extracts stating that fats can be *distilled* in the presence of steam into *fat-acids*, which are passed over as vapors and condensed in the still.

The patent of *Wright & Fouché*, dated January 25th, 1859, under which the defendant, Mitchell, in his answer as above condensed, asserted that he was working, was thus :

“ To ALL TO WHOM IT MAY CONCERN :

“ Be it known that we, Robert Alfred Wright, civil engineer, and Louis Jules Fouché, steam boiler-maker, of Paris, in the empire of France, have invented ‘ a new apparatus, destined to produce chemical decompositions by means of superheated steam and water ; ’ and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheet of drawings, making a part of the same.

“ The apparatus, which is the object of the present patent to secure, is susceptible of several industrial applications; but as it is chiefly intended for the *decomposition of fatty substances into fatty acids and glycerin*, we will describe it as applied to that purpose.

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This invention is represented in the annexed drawing, which shows the elevation of the apparatus complete.*

"The dimensions of the apparatus may vary with the various purposes to which it may be applied.

"*a* is a metal (iron or copper) boiler, of any form whatever, placed in a furnace, in order to be heated by a naked fire; this boiler has sides *sufficiently strong to resist a pressure of from ten to twenty atmospheres*; † it is of a variable capacity, according to the requirements of the manufacture, and it may have its interior lined with lead, or by any other metal which will not be attacked by the fatty bodies which are to be introduced and produced therein; *b*, hearth; *c*, ash-pit; *d*, dipping-pipe, furnished with a cock to empty the apparatus by pressure; *e*, *e*, man-hole, serving for cleaning the cylindrical vessel *a*, and for the introduction of substances, if required; *f*, metal tube (of iron or copper) connecting the bottom of the boiler *a* with the bottom of the cylinder *h*; *g*, metal tube of ascension, conducting the superheated water from the boiler *a* to the upper part of cylinder *h*. This tube is terminated in the interior of the cylinder *h* by a rose-jet, or, more simply, holes are made in the extremity, so as to distribute the water uniformly in the cylinder *h*, and to insure a molecular or finely subdivided contact between the superheated water and the substance submitted to the operation; *h*, iron or copper upper cylinder, which should, like boiler *a*, be able to resist a pressure of from ten to twenty atmospheres. The cylinder *h* receives the substances to be treated; *i*, funnel, furnished with a tube and with a cock, serving for the introduction of the substances to be treated into the cylinder *h*; that is, when this substance is of such a nature as to be introduced through a small aperture; *k*, man-hole, serving for cleaning the cylinder *h*, and for the introduction of substances to be treated which cannot pass through the funnel *i*; *l*, safety-valve; *m*, monometer, or pressure-gauge, indicating the pressure in the whole of the apparatus; *n*, *n*, cocks serving to indicate the height and level of the substance and of the water in cylinder *h*; *o*, cock, serving to empty the cylinder when the operation is completed.

"ACTION OF THE APPARATUS.

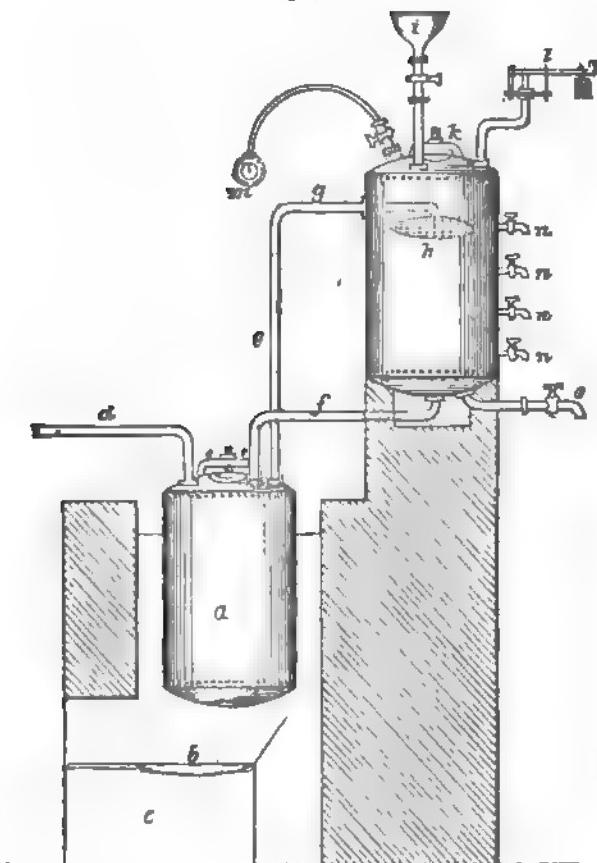
"Supposing everything arranged as shown in the drawing, then, in order to decompose fatty substances into fatty acids and into

* In the patent itself, there were besides, some descriptions and drawings of parts of the apparatus modified. With neither of these, however, is it necessary to embarrass the reader.—REP.

† From 340° to 420° Fahr.

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Fig. 3.



glycerin, the boiler *a* is completely filled with water. The cylinder *h* is filled with water up to one-third of its height, and it is then filled up to the level of the upper cock with the fatty bodies to be decomposed. The introduction of the fatty bodies takes place, as we have said, either through the funnel *i* or by the man-hole *k*. The boiler *a* is then gradually heated till the pressure-gauge indicates a pressure of from *ten to twenty atmospheres*, according to the nature of the substances submitted to the operation, when the following takes place :

"The *superheated water* in the boiler *a* acquires an ascending motion on account of the difference in the temperature of the two capacities *a* and *h*; a current is thus created, whence it results that the *heated water* in boiler *a* ascends through the tube *g* into the cylinder *h*, and being forcibly driven out through the holes in the rose-jet, passes through the fatty bodies and descends again through

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the tube *f* to the bottom of the boiler *a*, where it is again warmed, in order to recommence its ascending motion, and so on.

"When this operation has been thus continued during a length of time which may vary from five to eight hours, according to the nature of the fatty bodies operated on, and also according to the variation of pressure (varying from ten to twenty atmospheres) the fatty bodies are decomposed into glycerin, which remains dissolved in the water, and into fatty acids, which float in the cylinder *h*. The contents are now emptied out and separated from each other at the same time.

"In conclusion, we would remark that we are aware that: Firstly, the decomposition of fatty bodies by *water under the influence of heat and of pressure* is a well-known scientific fact. Water is substituted for the organic basis. It forms a perfect and fixed combination with the fatty acids, while the glycerin is dissolved in the excess of water. Secondly, that as this chemical action takes place under the influence of a weak affinity, it is necessary, in addition to the above-named physical and chemical conditions, to insure *perfect molecular agitation* of the whole mass; and that we wish it to be understood that what we wish to claim and establish as of our invention consists of an apparatus wherein the water and the fatty matters are heated separately in two different boilers. The first boiler is heated by the source of heat, while the second boiler is heated by the first boiler.

"In these boilers the agitation necessary for the *chemical action and combination is produced* by the pressure of the *heated water in the first boiler*. This water circulates continuously from this first boiler to the second boiler, and from the *second boiler to the first*, in a continuous and self-acting or automatic manner, without interruption. The characteristics of our apparatus are, that it produces *agitation by circulation alone*, a continuous and automatic circulation, produced by the pressure of water.

"Lastly, our apparatus effects its chemical action in a continuous manner, without the aid of any manual or other assistance."

"CLAIMS. Having described the nature of our invention and the manner in which the same is to be performed, we do not claim the application of *superheated water* for decomposing fatty bodies, nor the form of the apparatus above described, which may vary somewhat according to conditions and circumstances; but what we *claim* as our invention is, producing a continuous automatic circulation of *highly heated water* in a very finely divided state, through the bodies under treatment, by means of an apparatus constructed and employed substantially as herein shown and described."

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Tilghman insisted that the use of highly heated water under pressure to decompose neutral fats into fat-acids and glycerin was an infringement of his patent, no matter what particular form of apparatus might be used, or what particular temperature adopted, and no matter what particular device might be adopted to maintain the intimate mechanical mixture of the fat and water during the decomposing operation ; these last being obvious matters of detail, susceptible of infinite variety.

He contended that Mitchell's infringement consisted in using highly *heated water* with neutral fat in a close vessel, and restraining or confining it there under pressure so as to preserve the water while heated in *a liquid state*, and by means of this highly *heated liquid water* to produce fat-acid and a solution of glycerin.

Mitchell, on the contrary, asserted that *heat* alone will decompose fats into their elements; that the decomposition is effected by temperatures varying from about 510° F., the melting-point of bismuth, to 610° F., the melting-point of lead; that *these were the very temperatures named by Tilghman as required* in his process; but that in the very act of separation they will be destroyed unless some base be present to unite with these elements; that this destruction so produced was the *burning up*, in fact, of the fat by heat; that this effect was known to Tilghman; and that his invention consisted merely in using heat to decompose the fat by sheer heat, and to supply, at the instant of decomposition, water to prevent the burning up or destruction of the elements produced; that the single idea of Tilghman's patent was the use of great heat to decompose and a contrivance for immediately presenting particles of the aqueous agent to fix and reunite into the new forms the decomposed elements; that he did this by making an emulsion or mechanical mixture of fat and water; that he called for a vessel of great strength, and proposed to work under a pressure of 2,000 pounds to the square inch; and that he loaded the safety-valve to prevent the conversion of water into steam.

Mitchell therefore contended that from the very purpose of his patent, Tilghman was to be confined to the very ranges of heat above described; that it was an essential condition of the patent that there should be heat not below 510° Fahr., (the melting-point of bismuth;) that the manipulation should be rapid, not exceeding ten minutes; that the vessel should be entirely filled with the mixture of fatty matter and water, and that no steam whatever should be permitted in it.

He contended, in addition, as the Reporter understood it, that this construction of the patent was the right one on the face of the

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instrument and on principles of patent law, independently of the alleged special design of the patentee in framing his specification.

The evidence as to the range of heat by which fats are destructively decomposed, seemed, as the Reporter read it, to show, perhaps, that it was one of the conditions.

Renwick (see *infra*, 537) and Rand, experts of Mitchell, fixed the working range of Tilghman's patent at from 440° F. to 660° F.; and Rand and Wayne, also his experts, testified that the chemical action is the same with water heated and under pressure from 300° F. to 600° F.

From what has been said the reader will have perceived that the first question in the case was—

The construction of the patent. Tilghman had "claimed" as his "invention" "the manufacturing of fat-acids and glycerin from fatty bodies by the action of water at a high temperature and pressure," and he claimed as his invention nothing besides. And in the opening of his specification he declared that "for the purpose of executing his invention, he subjected these bodies to the action of water at a high temperature and pressure," and declared nothing more.

But he had said in his specification, that he "mixed the fatty body to be operated on with from a third to a half of its bulk of water," and that "the mixture may be placed in *any* convenient vessel in which it can be heated to the *melting-point of lead*, until the operation is complete;" adding that "the vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam." Saying nothing, however, about keeping the vessel entirely full of the mixture.

And he had described more specially "*an*" apparatus by which "the process may be performed more rapidly, and also *continuously*, by causing the mixture of fatty matter and water to pass through a tube *heated to the temperature already mentioned*," &c., which he said he *believed* to be the *best* mode of carrying his invention into effect, but which apparatus he stated that he "did not intend to claim as any part of his invention."

He had stated also that "the melting-point of lead had been mentioned as the proper heat to be used in this operation, because it had been found to give good results; but that the change desired took place with some materials at or *below* the melting-point of bismuth;" and "that no steam or air should be allowed to accumulate in the tubes, which should be kept entirely full of the mixture;" and that although decomposition took place "with great

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quickness at the proper heat," he "preferred that the mixture, while flowing through them, should be maintained at the desired temperature for *ten minutes*."

And he had said, when speaking of the matter of heat:

"By starting the apparatus at a low heat and gradually increasing it, the temperature giving products most suitable to the intended application of the fatty body employed, can be determined."

Was, then, the invention claimed (a process) so inseparably connected with certain means, that is to say, with certain and *specific* degrees of high temperature, or fullness of vessels or tubes, or rapidity of manipulation, as that, unless it was effected through those same specific degrees of high temperature, or fullness of vessels or tubes, or shortness of time, it could not be effected under the patent at all?

If this question was to be answered affirmatively there was no necessity to make a single inquiry further:—there was an end of the complainant's case; though, it might be admitted, that the defendant was doing exactly that which in the claim to his patent Tilghman claimed as *his* invention, to wit, the "manufacturing of fat-acids and glycerin from fatty bodies by the action of water at a high temperature and pressure." For however practical Tilghman's exact methods and exact means might be—that is to say, however much and well reduced into use—the defendant confessedly was not using exactly the same methods, or exactly the same means, in the particulars just mentioned, but was using methods and means different, confessedly, in some details of both. Plainly, he did not infringe.

But if this first question was not to be answered affirmatively—if the patent was to be construed broadly rather than closely—if Tilghman's invention was the manufacturing of fat-acids and glycerin from fatty bodies by the action of water at a [any] high temperature, by "any convenient" vessel, and irrespective of manipulation in a limited time, and of tubes or vessels kept constantly and entirely full of the mixture; then, of course, arose,

2d. *A question whether he was an original inventor.* And if he was, then would arise,

3d. *A question whether he had given anywhere such "a full, clear, and exact" description of his invention, and of the manner of making and using the same, as would enable any one skilled in the art most nearly allied to make and use the invention;* a matter required

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by the Patent Acts (5 Stat. at Large, 117,) as a condition to the validity of any patent granted.

And if he had given such a description, then would arise, as one not so immediately to be answered as before,

4th. A question whether the defendant infringed the patent of Tilghman.

It will be seen (*infra*, pp. 556-565) that this court in giving its judgment took the first view of the case, that is to say, construed the patent closely; so that the other questions possible to have arisen in the case did not perhaps arise, nor indeed any question but the great one of the construction of the patent.

Nevertheless, a great body of evidence was given on the assumption that the other view—that which gave to the patent the broad construction claimed for it by the patentee—was the true one, or might be taken by the court. The case was argued largely on that assumption, and the questions which would necessarily arise in that view are discussed very fully in the opinion given in the case. (*Infra*, pp. 565-587.)

Some of the evidence is, therefore, perhaps proper to be mentioned; in mentioning which the Reporter begs leave to say that the evidence was in some parts conflicting; that in his limited space he can present it much less perfectly than he could desire, and as with larger space he would not fail to endeavor to do.* He has also to say, that in some of its parts the case presented recondite matters of chemical science; matters which he confesses that he understands but little, and is perhaps unable to understand much more. If in any points, therefore, he has fallen into error, he asks for excuse from any one whom he may either mislead or fail to lead at all.

It is requisite to state that Richard Albert Tilghman, the patentee, was a citizen of Philadelphia, and brought up a practical chemist; that having, as he conceived, made the discovery that he could *by the action of water at a high temperature and pressure*, produce free fat-acids and solution of glycerin from fatty and oily bodies which contained glycerin as their base, he went in 1853 to England, and there, March 25th, 1854, obtained a patent from the British government for his invention. In the same year he got patents for the same invention from the governments of the United States, of France, and of Belgium; that granted by the United States being given at *supra*, p. 480. He was in Europe and Amer-

* The records contained 1048 closely printed 8vo. pages.

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ica alternately, from 1853 to 1859; and returned to the United States in August or September of the year last named.

I.

ORIGINALITY OF INVENTION.

THE COMPLAINANT'S SIDE OF THE QUESTION.

The fact that Tilghman was the person who first distinctly observed and publicly announced that water, in a liquid state, at a high temperature and under pressure, would, of itself, and without the aid of chemical substances, separate natural fat into its constituents of fat-acids and glycerin, did not, as the Reporter read the proofs, seem to be open to well-founded question.

Tilghman relied on the following evidences:

I. SCIENTIFIC TREATISES.

Among these the following were specially quoted:

1. *Richardson & Watts's Chemistry Applied to the Arts*, London, 1863, vol. 1, part 3, p. 751, where it is thus said:

"The only perfectly unobjectionable mode of obtaining glycerin, inasmuch as it alone insures the entire absence of mineral impurities, is the decomposition of the fats by the vapor of water at a high temperature. This mode of decomposition was first adopted as a means of obtaining fatty acids and glycerin by Mr. Tilghman, in 1854."

2. *Musprat's Chemistry*, London, 1856-8, article "Glycerin," vol. 2, p. 252, where it is thus said :

"A much more economical method is that introduced by Mr. Tilghman in 1854. By this process the fatty bodies are broken up into acid and basic substances, through the agency of heat, pressure, and steam."

3. *Watts's Dictionary of Chemistry*, London, 1864, vol. 2, p. 886, article "Glycerin," where it is thus said:

"By heating fats with water or with steam. This is the only unobjectionable method of obtaining glycerin, inasmuch as it alone insures the entire absence of mineral impurities. It was first carried out by Mr. Tilghman in the following manner:"

Tilghman's mode of working with the coil apparatus is then described.

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II. MEN OF SCIENCE.

1. *The Paris jury of savants*, at the Exposition of 1855, when speaking of Chevreul, the eminent French chemist, say:

"We can affirm, without fear of contradiction, that, with the exception of the undertaking of the saponification of the fatty bodies by water, which remained unknown to him, he has indicated in a clear and precise manner all the scientific bases upon which depend the different methods of practical manufacture of the fat-acids employed for making candles."

And speaking of Tilghman, under the head of "*Aqueous saponification in a close vessel*," the same jury say:

"*It was Mr. Richard Albert Tilghman, chemist, of Philadelphia, who was the first who had the idea of applying this reaction on a large scale.* In his patent taken in London, the 25th of March, 1854, he thus sets forth *his discovery*, and his manner of operating:

"' My invention consists in a new method of obtaining free fat-acids and solution of glycerin from animal and vegetable fatty and oily bodies which have glycerin as their base.

"' My invention consists in exposing the aforesaid fats and oils to the action of water at a high temperature and pressure, the effect of which is to cause the combination of the water with the elements of the neutral fats, so as to produce at the same time free fat-acids and solution of glycerin.'"

2. *Professor J. C. Booth*, analytical chemist, of Philadelphia, called and recalled, was thus in substance interrogated, and thus in substance answered:

"Q. With whom did you study chemistry, and where? How long have you been engaged in the profession of analytical chemist? What posts, if any, in public institutions have you held, and what works or papers have you written on chemistry?

"A. I studied chemistry with Wöhler, in Cassel, Germany, and with Professor Magnus, in Berlin, during 1833, 1834, and 1835. From 1835 to the present time I have been engaged as professional analytical chemist. I was professor of chemistry applied to the arts in the Franklin Institute, Philadelphia, for ten years; and professor of chemistry and physics in the Central High School, Philadelphia; I have been for the last eighteen years in the United States mint, and I still continue, independent of the mint my profession of analytical chemist. I am the author of the greater part of the *Encyclopedia of Chemistry*; of a report upon the progress of chemical manufactures made to the Smithsonian Institute, at the

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request of the perpetual secretary of that institute, Professor Henry; I also edited the translation of Regnault's Chemistry, translating much of it myself and annotating it.

"Q. From your knowledge of chemistry, who would you say was the discoverer of the chemical power of water in a liquid state, at a high temperature and pressure, on fats, to produce fat-acids and glycerin?

"A. Mr. R. A. Tilghman.

"Q. Do you know of any other person who has claimed the merit of this discovery?

"A. I know of no other.

"Q. Is this discovery regarded as a new and important fact in chemistry?

"A. It is so regarded."

* * * * *

3. The answer of the defendant having set up that it was shown by a paper published in the year 1823, (*Journal of Science*, London, vol. xvi, p. 172,) entitled, "Change of Fat in Perkins's Engine by Water, Heat, and Pressure," that Tilghman had been anticipated in his discovery, and, as will be hereafter seen, some reliance having been placed on that paper, the examination of the witness thus proceeded :

"Q. Give a list of chemical treatises that you have examined on the subject of this discovery and its date, and particularly with a view of showing whether it was known between 1823 and 1854, and whether it has been known since 1854.

"A. I annex a list of standard chemical treatises, of the highest authority, of dates between 1823 and 1854, which I have examined. They all contain descriptions of the properties of fat and fat-acids, and the known methods of producing fat-acids and glycerin. None of them mention the fact that fat-acid and glycerin can be produced by the action of water on fats at a high temperature and pressure.

"I annex another list of standard chemical treatises of dates subsequent to April 3d, 1854, all of which contain mention of that chemical fact.

"I therefore infer and conclude that that chemical fact was first made known subsequent to 1852, and prior to April 3d, 1854.

List of treatises published between 1823 and 1854, which do not mention the chemical fact.

Dumas's Chemistry, vol. 5. Paris, 1835.

Berzelius's Chemistry, vol. 2. Brussels, 1838

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- Ure's Dictionary of Chemistry. London, 1831.
 Brande's Chemistry. London, 1841.
 Graham's Chemistry. London and Philadelphia, 1843.
 Booth's Encyclopedia of Chemistry. Philadelphia, 1850.
 Regnault's Chemistry. Paris and Philadelphia, 1852.
 Gerhardt's Chemistry. Paris, 1854.
 Gmelin's Chemistry, vol. 7. London, 1852.
 Pelouze & Fremy. Chemistry. Paris, 1850.

List of chemical treatises published after April 3d, 1854, which do mention that chemical fact.

- Comtes Rendues. Paris, April 3d, 1854.
 Liebig & Kopp's Year-book. Giessen, 1855.
 Miller's Chemistry. London, 1862.
 Watt's Dictionary of Chemistry. London, 1864.
 Gmelin's Chemistry, vol. 16. London, 1864.
 Musprat's Dictionary of Chemistry, vol. 2. London, about 1866-8.
 Chemical Gazette. London, 1856.

"Q. State what technical works on the subject of the manufacture of fat-acid, published between 1823 and 1854, you have examined, and whether any of them contains any description or notice of the process of manufacturing fat-acid and glycerin from fats by the action of water at a high temperature and pressure.

"A. I have examined the following technical works, all of which contain descriptions of the various processes for the manufacture of fat-acids. None of them mentions or refers to the process for the manufacture of fat-acid and glycerin by the action of water on fats at a high temperature and pressure.

- Chevreul & Gay-Lussac's Patent. Paris, 1825.
 Hibert's Encyclopedia. London, 1838.
 Dumas's Chemistry, vol. 6. Paris, 1863.
 Parnell's Applied Chemistry, vol. 2. London, 1844.
 Knapp's Technology. London and Philadelphia, 1848.
 Roret's Encyclopedia. Fat-Acids. Paris, 1849.
 Morfit's Chemistry of Soap and Candles, 1st edition. Philadelphia.
 Payen's Chemistry. Paris, 1851.
 Official Report of London Exhibition. London, 1851.
 Tomlinson's Cyclopedias of Arts. London, 1852.
 Appleton's Dictionary. New York, 1852.
 Ure's Dictionary of Arts. Boston, 1853.

"Q. State what technical works on the subject, published since 1854, you have examined, and whether they mention the process of manufacturing fat-acids and glycerin by the action of water on fat at a high temperature and pressure, and to whom they refer as the inventor of that process.

"A. I have examined the following technical works. They all mention the water process, and refer to Tilghman as its inventor:

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Bulletin de la Société d'Encouragement. Paris, 1855.

Morfit's Chemistry of Soap and Candles, 2d edition. London and Philadelphia, 1856.

Official Report of London Exhibition. London, 1863.

Richardson & Watts's Technology, vol 1, part 3. London, 1863.

Repertory of Patent Inventions, 3d series, vol. 24, page 408. London, 1854.

Mechanic's Magazine, vol. 61, page 111. London, 1854.

Newton's Journal of the Arts and Sciences, vol. 45. London, 1854.

Franklin Institute Journal, 3d series, vol. 29, page 36. Philadelphia, 1855.

"Q. Please state in general terms the result of your examination of the standard chemical and technical publications.

"A. No one of the technical treatises or chemical works, published prior to 1854, contains any mention either of the chemical fact of the decomposition of fat by water at a high temperature and pressure, or of the manufacturing process founded upon it. After 1854 both the chemical fact and the manufacturing process are mentioned in numerous technical and chemical publications."

The testimony of—

4. Professor R. E. Rogers, professor of chemistry for ten years in the University of Virginia; professor of the same science for eighteen years in the University of Pennsylvania; editor of the last American edition of Turner's Chemistry.

5. Professor Wolcott Gibbs, who had studied with Professor Hare, of Philadelphia; with Dr. Torrey, of New York; with Professors Ramelsberg and Rose in Berlin, Prussia, and with Liebig in Giessen; for ten years professor of chemistry and physics in the Free Academy in New York, and now Rumford professor in Harvard University.

6. Professor F. A. Genth, student for two years with Professor Gmelin; for two with Liebig and others; for three years assistant to Bunsen; for two years professor in the University of Marburg.

7. Professor Robert Bridges, professor of chemistry in the Philadelphia College of Pharmacy; editor of Graham's Chemistry, and of several editions of Fowne's Chemistry—all sustained the assertion of Professor Booth as to the originality of Tilghman with the invention.

Professor Gibbs thus testified :

"Q. State when and by whom your attention was first called to the question of the *novelty* of the plaintiff's patented invention, as affected by defendant's exhibits. State whether you then made a full investigation of the subject, and a report, and state the substance of any such report.

"A. My attention thereto was first called by Mr. Mitchell,

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defendant, in the early part of the year 1863. I then made a full investigation of the subject at his request, and gave him a written opinion, the subject of which was *that the plaintiff's invention was new.*"

8. *The testimony of the Patent Office.* In 1858, Mr. Werk, a manufacturer of candles in Cincinnati, and afterwards sued by Tilghman as an infringer of his patent, applied to the Patent Office for an improved treatment of fatty acids through the aqueous process. He was thus replied to by the Honorable Joseph Holt, then Commissioner of Patents:

UNITED STATES PATENT OFFICE,
June 26th, 1858.

"SIR: Your application for a patent for an improved treatment of fatty acids has been examined. You are referred to Regnault's Chemistry, vol. ii, p. 1594; to Payen's Chemie Industrielle, p. 771, and to the patents of R. A. Tilghman, January, 1855, and October, 1854. Mr. T. is the acknowledged discoverer of this process. The application is refused for want of novelty.

"Respectfully yours, &c.,

"J. HOLT, Commissioner.

"M. WERK, Esq."

9. *The London International Exhibition of 1862.* At this exhibition one of the juries, reporting on the subject of oils, fats, wax, and their products, and referring to the efforts made "as early as 1855," by M. De Milly, to modify the process of saponification by means of lime, said:

"Instead of effecting this decomposition at a temperature of 212°, and employing 14 per cent. of lime, he raised the temperatures by working under pressure and employing only 4 per cent. of lime.

"At the present time M. De Milly has, indeed, reduced the proportion of lime to 2½ per cent. This process has been imitated in Austria. Undoubtedly it constitutes a real improvement upon the ordinary method of saponification by lime; *but in spite of this considerable improvement, which is in fact but a combination of Mr. Tilghman's mode of saponification by water at a high temperature,* combined with the lime process, we cannot believe that these two methods of saponification, under any modification at present attempted, can, in an economical point of view, successfully compete with the sulphuric saponification.*"

* Specimens of which are exhibited in the American Department.

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10. *Medal of Honor.* The report of the same exhibition (page 7) contains this:

"MEDALS.

"UNITED STATES: TILGHMAN, *for fatty acids obtained by aqueous saponification.*"

III. MANUFACTURERS OF CANDLES.

1. *Mr. G. F. Wilson,* managing agent of Price & Co.'s Patent Candle Company, at Battersea, London—the largest candle factory in the world—who, it appeared, was besides a man of education, and had made the general and particular matters now under consideration the subject of learned research, and was in the habit of writing and lecturing upon them, affirmed that Tilghman was the discoverer of the invention claimed by him. In a public lecture, delivered by him in January, 1856, before the Society of Arts, in London, he said :

"In January, 1854, Mr. Tilghman, an American chemist, who has studied all that has been published here and in France on the subject of acidification and distillation of fatty bodies, obtained a patent for exposing the fats and oils to the action of water at a high temperature, and under great pressure, in order to cause the combination of the water with the elements of the neutral fats, so as to produce at the same time free fat-acids and solution of glycerin. He proposed to effect this by pumping a mixture of fat and water, by means of a force-pump, through a coil of pipe heated to about 612° Fahr., kept under a pressure of about 2,000 pounds to the square inch ; and he states that the vessel must be closed so that the requisite amount of pressure may be applied to prevent the conversion of water into steam. This is, all must admit, a beautiful, original chemical idea, well carried out."

The defendant, *Mr. R. G. Mitchell*, who was a witness, testified that the process by water, heat, and pressure alone had not been known to him before the date of Tilghman's patent, nor indeed known to him until four years afterwards. He said :

"I have known for more than forty years that fats were acidified by moisture. I never knew that fat-acids and glycerin could be obtained from fats by heat, water, and pressure until I heard of it in connection with the patent of Wright & Fouché, in 1859."

ORIGINALITY OF INVENTION.

THE DEFENDANT'S SIDE OF THE QUESTION.

I. SCIENTIFIC TREATISES.

No scientific treatise was produced which denied, with mention

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of Tilghman's name, or by specific reference to what he asserted to be his, that he had discovered what in the claim to his patent he claimed as his invention. An extract from a paper in the *Journal of Sciences*, vol. xvi, p. 172, published in London in 1823, entitled, "Change of Fat in Perkins's Engine by Water, Heat, and Pressure," and made by the defendant an Exhibit (E) in the case, and somewhat relied on by him, mentioned that

"Mr. Perkins used in his steam-cylinder a mixture of about equal parts of Russia tallow and olive oil to lubricate the piston and diminish friction; that the mixture was consequently exposed to the action of steam at considerable pressure and temperature; and, being carried on by steam, it was found in the water, giving rise to peculiar appearances."

A particular account, too long to be here inserted, was annexed.

II. MEN OF SCIENCE.

1. *Professor P. H. Vanderweyde*, a native of Holland, educated in chemistry at the Royal University of Delft, M. D., professor of chemistry in the New York Medical College, and in the Cooper Institute, and fifteen years in America, was at different times asked and answered thus:

"Q. From your knowledge of chemistry, would you say that complainant was the discoverer of the power of water under heat and pressure to dissolve fats into acids and glycerin?

"A. The more my information about the matter has increased the more I am convinced that the power of water to decompose fats into the fatty acids and glycerin was known a long time before the date of Mr. Tilghman's patent.

"Q. Do you know, or did you ever hear of any standard chemical treatise or book, which states that complainant made any chemical discovery as to the decomposition of fats into fat acids and glycerin?

"A. I do not know, nor did I ever hear of such a statement; and in those standard works, when Mr. Tilghamn's process is mentioned at all, it is stated simply that he took out a patent for a certain apparatus."

Cross-examined.

"Q. State who was the first person, within your knowledge, who made the explicit statement that fat-acids and solution of glycerin could be obtained for manufacturing purposes by the action of liquid water on neutral fatty bodies at temperatures above

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350° Fahrenheit; and state when and where such statement was made.

"A. I am not aware that any other man made that precise statement, with all the special conditions mentioned in the question, before Mr. Tilghman.

* * * * *

"Q. Who was the first person who got so far as to use 'water alone' in the practical manufacture of stearic and margaric acid, and oleic acid, and glycerin, from neutral fat?

"A. I know not who the first person was who practically manufactured stearic and the other fatty acids besides glycerin from the fats by means of water alone, but I know that Mr. Tilghman took a patent for that purpose. I doubt, however, if it was ever put in practical operation. Surely not to make glycerin."

J. The defendant having put in evidence an extract from the *Journal of Science*, London, 1823, vol. xvi, p. 172, entitled "Change of Fat in Perkins's Engine, by Water, Heat, and Pressure," which paper was marked "Exhibit E," (quoted *supra*, p. 500)—

Florence Verdin, partner of the defendant, under the firm name of Mitchell & Co., and who testified that he had an interest against the patent, and if in the present suit a sum of money was decreed to be paid to the complainant he would be, he supposed, responsible for one half, had testified, in 1868, in another case, (all the testimony in which was received by consent,) as follows:

"Q. Would not any manufacturer of ordinary skill and information in his art, as current prior to 1854, have known from Exhibit E that fat-acids and glycerin were produced by the action of water at a high temperature and pressure, and does not the presence of acrolein involve the production of glycerin?

"A. I should have known it, and I cannot doubt others would, as a person had only to subject the fat to the action of water at a temperature and pressure named to have acidified fats; acrolein cannot be formed without glycerin being formed first.

"Q. Do you know of any standard chemical treatise or book which states that the complainant has made any chemical discovery in reference to the decomposition of fats into fat-acids and glycerin?

"A. I do not know of any such works which give Tilghman the credit of being a chemical discoverer.

"Q. Did you ever hear of any standard chemical treatise or book which ascribes to the complainant any such discovery?

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"A. I have never heard of any.

"Q. Are technical works of any value to the manufacturers of fat-acids and candles, so far as you have examined them; and if so, what?

"A. They have never been to me; my knowledge was always superior to theirs; they are generally more likely to mislead the manufacturers than to benefit them.

"Q. Is the information communicated in Tilghman's patent of 1854 of any more value to a manufacturer of fat-acids and candles than that which is found in defendant's Exhibit E?

"A. I think there is no difference between the two, and I have always thought, and think so yet, that the patent of Mr. Tilghman had been copied from Exhibit E."

Cross-examined.

"Q. When did you first see it stated in a book or document that highly heated water under pressure would, without the aid of chemicals, decompose neutral fat into fat-acid and a solution of glycerin?

"A. I don't know when.

"Q. Can you swear you ever saw that statement prior to the date of Mr. Tilghman's patent—January, 1854?

"A. I cannot.

3. See also testimony of Drs. Rand and Wayne, *infra*, pp. 536-537.

II.

CAPACITY FOR PRACTICAL USE.

THE COMPLAINANT'S SIDE OF THE QUESTION.

How far Tilghman's discovery or invention had been or could be carried on so as to be practically—that is to say, commercially—of value by the rapid manipulation described by him, or with the *very* high degrees of heat which he mentioned, or with the vessels filled with the mixture alone—assuming that either rapidity, or specific degrees of high heat, or entire absence of steam from the vessel in which his mixture was to be put, were an essential part of his invention as patented—seemed, as the Reporter read the evidence, to be a matter less clear than that he was the true and first discoverer of what in the claim to his patent he claimed as his invention.

As on the first point, the evidence relied on by him was that of

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books of science, and more particularly of men of science and manufacturers of candles.

I. SCIENTIFIC TREATISES.

1. *Richardson & Watts's Chemistry* (quoted *supra*, p. 493): "The only perfectly unobjectionable mode of obtaining glycerin."
2. *Musprat's Chemistry*; article, "Glycerin" (quoted *ut supra*): "A much more economical method is that introduced by Mr. Tilghman."
3. *Watts's Dictionary*; article, "Glycerin" (quoted *ut supra*) "This the only unobjectionable mode."

II. MEN OF SCIENCE.

1. *Professor J. C. Booth*, already described, thus testified:

"I tried the second apparatus indicated in the patent, with an apparatus quite similar to the drawing accompanying the specification to Mr. Tilghman's patent, except that the coil was circular, rising in a continuous spiral coil from below upwards, so that the exit-pipe came from the upper part instead of the lower, as indicated in said drawing.

"As we obtained at the rate of four hundred to four hundred and fifty pounds in twenty-four hours, in so small an apparatus, and as the product consisted of fat-acid and glycerin, I regard the process as a most perfect manufacturing process; that is, making fat-acid and glycerin in an economical manner, and adapted to commercial uses.

"By comparing the solid fat-acids obtained by the coil apparatus, and subsequent clarification and pressure, with the solid fat-acids obtained in Grant's candle factory, in Philadelphia, by the sulphuric saponification, I believe that the product of the coil apparatus is fit for making candles. By comparing the glycerin which I obtained by the coil apparatus with several kinds of glycerin of commerce, I believe that the coil apparatus will make a glycerin, suitable for commercial purposes, equal to that produced by any other process, after resorting to the usual method of purification."

2. *Professor Rogers*, already described:

"I was present at the trial of the process of the complainant, in the coil apparatus, in company with Professors Booth and Bridges, and Mr. R. A. Tilghman. It is my opinion, and not only my opinion, but my thorough conviction, that it is a process altogether adapted to carrying out the method of Mr. Tilghman.

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"The odor of the products evinced nothing offensive which would indicate the presence of acrolein as a hurtful substance, the small amount of oxide of iron being an accidental and not necessarily present substance, and was readily removable."

3. *Professor Bridges*, already described, stated that he had been present at the trial of the apparatus referred to; that the trial was made at "about the temperature of the melting of lead." He exhibited specimens of the lard stearin used, and some of the results of the operation, describing particularly how they were obtained. He concluded by saying:

"From the amount of the material used during the operation, and from the character of the results, I consider the apparatus of Tilghman as one capable of carrying on, in a practical manner, his process."

III. MANUFACTURERS OF CANDLES.

1. In June, 1854, Tilghman exhibited his patent and his coil apparatus to Mr. G. F. Wilson, above named as the managing director of Price & Co.'s large candle company in England, and made experiments with it before him. On the 13th of December, 1855, after having thus seen it, that company agreed to pay Tilghman £1,000 sterling a year for the use of that patent, and some minor ones of less importance that expired prior to 1859, they, Price & Co., being free to terminate the arrangement at any time by giving Tilghman two years' notice. They had not terminated it in May, 1864, when the testimony to prove facts just stated was taken, but had, since 1859, paid in each year, and in 1864 were still paying to Tilghman the £1,000 sterling for the use of his patent of 9th January, 1854, alone.

2. So a certain Monier, of Paris, one of the managing agents of the *Société Générale de Stearinerie*, at Villette, near Paris, having seen Tilghman's apparatus at Tilghman's laboratory in London, in June, 1854, and samples of fat-acid and glycerin said to have been produced by it, made a preliminary agreement with Tilghman that "after experiments had been made to enable Monier to judge of the efficacy and reality of the invention," a contract by which they were "to buy the absolute, general, and exclusive license for the new processes of Mr. R. A. Tilghman, giving him a royalty in money," should be made before a notary. The coil apparatus was brought to Paris and worked at Monier's factory; many experiments being made with it. It was worked both by hand and by steam-power. A contract in form was then made be-

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tween Tilghman and Monier, and 15,000 francs were paid to Tilghman. Tilghman and his brother then attempted to make a large apparatus at Monier's factory at Paris. This occupied nearly six months; a good deal of what was done having been superintended by Tilghman's brother, and not by him; he having been ill a short part of the time, and for much the greatest absent in America. The experiments, owing to causes about which Tilghman and Monier disagreed, were unsuccessful, and the contract was annulled by consent of both parties. Tilghman having returned to France, a new contract was made with him, and 12,000 or 15,000 francs paid to him; and more experiments made in Paris. They, too, were unsuccessful; Tilghman and Monier disagreeing as before about the cause. Tilghman being now in Philadelphia, Monier, representing that the agreement between them was verbal, and not producing the written contract, sued him in one of the inferior courts of Paris, claiming damages in 25,000 francs. Judgment by default for want of an appearance was got by Monier, and damages given in 2,000 francs. Tilghman, in America, hearing of this, ordered an appeal to be taken, and one was taken. The appeal, however, was not prosecuted. A compromise was made between the parties by which 1,000 francs were paid to Tilghman, the lawsuit discontinued, all previous engagements made "null and of no effect," and Tilghman left free to "re-enter into the free use and enjoyment of his patents."

3. *The testimony of Charles Taylor Jones, of Cincinnati, since 1849 a member of the firm of Gross & Dietrich, manufacturers of candles.*

"Q. State the process first employed by you for decomposing fats into fat-acids and solution of glycerin.

"A. The first process used by me was that of saponification with about fourteen per cent. of lime, in open vessels, and decomposing the lime-soap thus obtained with sulphuric acid; the quantity of sulphuric acid requisite being about two and a half pounds to each pound of lime.

"Q. What was the next process, and what advantages had it over the first? And why did you abandon it?

"A. The next process was saponification under pressure of about 130 lbs. to the square inch, with six to seven per cent. of lime, and a corresponding diminution of sulphuric acid. It had the advantage over the first process of diminishing the cost of the operation just as much as the lime and sulphuric acid was diminished. This process was abandoned for another, which enabled me to dispense entirely with the use of lime and sulphuric acid.

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"Q. State what process you now use and what are its advantages; and also, whether you practice the said process by a license from the complainant, and have paid and are to continue to pay him for its use.

"A. I use the process patented to Tilghman, the advantages of which, over all other processes known to me, are, that it enables me to produce fat-acids without the use of lime or sulphuric acid. I practice this process by a license from the complainant, and have paid and am to continue to pay him for its use.

"Q. State how much fat has been decomposed at your factory by the action of water only at a high temperature and corresponding steam pressure of 300 lbs. to the square inch.

"A. About 90,000 lbs.

"Q. How much fat is treated at each charge of the apparatus? And how much fat could you decompose per week, if working night and day, at 300 lbs. pressure, at the same rate you have obtained in working by daylight only?

"A. From 6,000 lbs. to 7,000 lbs. of fat is treated at each charge of the apparatus, and I could decompose about 150,000 lbs. per week by continuous work.

"Q. State how long it takes, in your apparatus, after the charge has been heated up, to decompose it into fat-acid and glycerin by the action of water alone at 300 lbs. steam pressure.

"A. About five hours.

"Q. Would you have any difficulty in continuing to work by water only if you desired to do so?

"A. I think not.

"Q. Have you any specimens of stearic acid and of candles made from fat decomposed at your factory by water only? If so, produce them, and mark them.

"A. I have such specimens. Here they are, marked as directed.

"Q. How much fat have you worked, in all, under the complainant's patent when using one-half per cent. of lime in addition to the action of the heated water? And how long has your factory been working Tilghman's process?

"A. I have treated 738,000 lbs. of fat in which a half per cent. of lime was used; and I have been using Tilghman's process since the first of November last.

"Q. Examine the first-described process in the complainant's patent, and state whether or not you would infer therefrom that the strong vessel mentioned was to be entirely filled up with oil and water, so as to leave no steam-room whatever in the vessel.

"A. I have examined this part of the patent, and I can see

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nothing in it requiring the vessel named to be completely filled with oil and water.

"Q. State whether there are reasons, obvious to any one accustomed to steam-boilers, why said vessels should or should not be entirely full, and state such reasons.

"A. There are reasons which I should think would be entirely obvious to one accustomed to steam-boilers why said vessels should not be perfectly filled with oil and water; the prominent one of which, to my mind, would be the danger of applying even a moderate heat to the vessel, under such circumstances, inasmuch as the expansion of the contents under only a moderate heat might rend the vessel asunder.

"Q. Examine the second-described process in the complainant's patent, and state whether or not you can see reasons for the direction there given, to keep the tubes entirely full of liquid, and not to allow steam to accumulate in them; if yea, state such reasons in detail.

"A. I see no reasons given therefor, in that second part of the patent. Obvious reasons for that direction occur to my mind as a manufacturer, which are the avoidance of irregular working of the machinery indicated, and consequently increased strain and wear of the machinery.

"Q. Do you know the rules for calculating the strength of cylindrical iron boilers? If yea, calculate thereby the strength of perfectly welded iron tubes of the dimensions directed to be used in the second-described apparatus in plaintiff's patent.

"A. I know the rules which I believe to be generally adopted for calculating the strength of boilers. By that rule I compute the strength of the tubes alluded to in the second part of the plaintiff's patent, at 60,000 lbs.; that is, it would take 60,000 lbs. to burst them."

Cross-examined.

"Q. In the first process used by you, was not water used, and were fats ever decomposed into fat-acids and a solution of glycerin without the intervention of water, which was always necessarily present when the glycerin was obtained, and generally used in connection with steam?

"A. Water was used in the first process described, but in quantity only slightly in excess of that requisite for preparing the milk of lime. I do not know of the decomposition of neutral fats into fat-acids and a solution of glycerin ever having been attained without the intervention of water. Within the limits of my ex-

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perience or knowledge, steam has always been an agent in the process.

"Q. When was the second process, described by you, first used by yourself?

"A. In the fall of 1859.

"Q. You state you use the process patented to Mr. Tilghman. Describe in detail that process, as used in your factory.

"A. I place the melted fat to be treated in a large vessel with water, equal to one half the bulk or weight of the fat, or in excess of that proportion, and subject the charge to a pressure of steam, 300 lbs. to the square inch, for a period of about five hours, keeping the water and fat in intimate contact by pumping the water from the bottom to top, and discharging it on the surface of the fat to make its way to the bottom. I prefer, however, to use half of one per cent. of lime, inasmuch as that quantity of alkali enables me to perfect the decomposition in four hours' working, at a pressure of 250 lbs. per square inch, with material economy of fuel, and of wear and tear of machinery. Since ascertaining the advantages of this mode I have adhered to it.

"Q. Describe particularly when your apparatus was first put in operation, under whose superintendence, where made, the size, construction, shape, materials that compose it, its capacity and cost, the quantity of fat and water put into the apparatus at one time, how full at each charge, and the disposition made of the products after it was decomposed.

"A. My apparatus was first put in operation in September, 1863, under the superintendence of R. A. Tilghman. The vessel in which the fat is treated was made in Philadelphia. This vessel comprises a tube of about thirty-eight feet in length and thirty-eight inches in internal diameter, made of iron plates of half-inch thickness, and a copper tube of nearly the same length, and about thirty-five inches diameter, placed inside the iron tube so as to leave an annular space of about one and a half inches between the copper and iron vessel. The estimated capacity of the vessel is about 10,000 lbs. of oil and water, and the quantity usually put into the vessel at one time is 6,000 lbs. of fat, and about 4,000 lbs. of water, which is held by the copper vessel mentioned above, and serves to fill it within about three feet of the head or top. When the decomposition is perfected, the water holding the glycerin in solution is discharged into its proper receptacle, and the fat-acids into their place.

"Q. Explain why two tubes are used instead of one, and why they are of different metals.

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"A. Because the cheapness of iron, and its greater strength as compared with copper, suggested its use to resist the great requisite pressure, and the inner vessel was introduced to save the iron from contact with the fat-acids, which would rapidly corrode the iron, and soon render such iron vessel unfit for use.

"Q. In the description of the operation now used by you, you mention oil and water as the contents of the boiler. When no lime is used, are the products satisfactory?

"A. The products are satisfactory when no lime is used. I have treated fourteen or fifteen charges of 6,000 lbs. to 7,000 lbs. of fat, each with water alone. The reasons for adding lime in subsequent treatments was the desire to diminish the pressure, and this course has been persevered in, not only because that object was attained, but because an economy was effected in fuel, labor, and time.

"Q. Do you now state that in order to make the process with the greatest economy in practice, the aid of the pump to circulate the water and oil freely, and the presence of lime in the proportion described by you, are necessary?

"A. I do not know that a less quantity of lime would not suffice, but I do regard the use of the pump and of some lime essential to the use of my apparatus with the greatest economy.

"Q. By whose direction do you use the pump and the percentage of lime now employed by you?

"A. The pump was an original part of the apparatus named, and its use directed by the complainant. I use the lime solely for my own convenience and advantage, at my own instance, without direction.

"Q. Who was present when you first employed lime in the process; and who first suggested its use?

"A. Some of my employés were the only ones present when lime was first used. The suggestion of its use, I think, was made by my foreman at the factory.

"Q...Is not lime used in the process produced by the apparatus of Mr. Tilghman, in every instance, so far as your knowledge extends, when said apparatus is used?

"A. I believe it is.

"Q. Why?

"A. I believe it is used for the same reasons that I use it, namely, to economize time and cost.

"Q. State whether any one in your manufactory ever mixed a fatty body with from a third to a half of its bulk of water, and placed the mixture in any convenient vessel in which it could be

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heated to the melting-point of lead; that is, to 600° Fahrenheit, until the operation was completed, the product being free fat-acid and a solution of glycerin?

"A. No.

"Q. Have you always used the pump in your apparatus?

"A. I have invariably used the pump.

"Q. State how long it takes to heat up the charge in your apparatus.

"A. I have not noted the time. The water is heated up to a temperature indicated by a pressure of 250 lbs. to the square inch, before its introduction to the vessel in which the fat is decomposed; and the pump is set to work immediately after the water has been introduced. This water is heated in the boilers which supply the steam pressure, and is blown up from them into the vessel containing the fat.

"Q. In your examination in chief, you state that you have examined the first-described process in the complainant's patent and could see nothing in it requiring the vessel named to be completely filled with oil and water; please quote from the said specification any part which states that the convenient vessel therein mentioned should not be completely filled with fat and water, or any passage implying the same.

"A. There is no part of the said specification which requires explicitly or implicitly that the said vessel should not be completely filled.

"Q. Do you now say that, by a plain interpretation of said specification, as a manufacturer, you would not infer that said vessel was to be completely filled with oil and water?

"A. I do now say that, as a manufacturer, I would not infer that a plain interpretation thereof would require the vessel to be completely filled with fat and water.

"Q. Have you ever used, for the manufacture of fat-acids and glycerin, such an apparatus as is described in the second part of the complainant's patent?

"A. I have not.

"Q. Please quote from the complainant's patent the words explicitly or implicitly requiring or authorizing the use of a pump and one-half per cent. of lime as used in complainant's apparatus, now employed in your factory.

"A. I find no such words.

"Q. Is there anything to that effect in the patent as reduced to practice in your factory?

"A. I believe not, sir.

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"Q. State how the steam pressure of your apparatus is produced, and how it is applied.

"A. It is produced by cylindrical boilers, which are twenty-four inches in diameter and about thirty-four feet long, of which there are two. The steam generated in them is introduced into the upper part of the digester, and into an angular space between the iron and copper vessels composing the digester, the iron vessel being closed steam-tight, and the upper part of the copper vessel sufficiently open to admit the steam directly into contact with the charge."

Re-examined.

"Q. You have stated the use of the pump in the apparatus erected by the plaintiff at your factory, to be the circulation of the water through the oil under treatment; now state, from an examination of the second-described apparatus in Tilghman's patent, whether or not provision has been made for producing this thorough mixture of the fat and water before it went into the apparatus, as well as for renewing the state of mixture, should it be necessary, within the apparatus itself.

"A. It seems to me that provision has been made for effecting and renewing that intimate mixture; not having used the apparatus described in the second part of the plaintiff's patent, I cannot speak from experience.

"Q. Has the pump employed in your apparatus ever failed to act? Of what material is it composed?

"A. It has not. It is composed of bronze."

IV. OTHER PROOFS.

1. *Tilghman offered to show to the defendant his coil apparatus practically at work, and the offer was declined.*

Just before the testimony had been closed, Mitchell asked for the inspection of Tilghman's apparatus. The examiner's minutes proceed :

"March 24, 1864. Tilghman replied :

"That the coil apparatus is very weighty and bulky, and was dismantled at the request of Professors Booth and Bridges, the day after the experiments therewith were tried by them, in order to enable them to examine its interior construction and dimensions; that to get the coil apparatus again in working order, and try new experiments, would require considerable time and delay the hearing; that the defendant neglected to make his request until the moment of adjournment on the day originally fixed for closing the

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testimony; that the complainant has, however, caused the same experiments to be repeated in a more portable apparatus, which he produces and now formally offers to experiment with it, and try any pertinent experiment in the presence of defendant, on Friday, March 25th, at any suitable place and hour which defendant will now indicate; it being understood also that such experiments tried for defendant are not to be permitted to delay the hearing.'"

To this offer the defendant made no reply.

Tilghman subsequently thus addressed his counsel:

"APRIL 5th, 1864.

"SIR: The only objection which the complainant had to the repeating of his experiments on the coil apparatus was the risk of delaying the hearing to the next term.

"As the court has ordered that the case shall still be heard this term, though at a later day, the complainant now offers to repeat the experiment tried by Professors Booth, Rogers, and Bridges, in the presence of the defendant; and requests the defendant to signify his acquiescence or refusal of this proposition within five days. If accepted, the complainant will at once have his apparatus put in order, and then appoint the earliest day which may be convenient to both parties for the defendant to visit complainant's laboratory in Philadelphia, and see the process in action.

"Very truly yours,

R. A. TILGHMAN.

"G. C. GODDARD, Esq.,

"*Solicitor for defendant, 17 William street, New York.*"

And thus subsequently (inclosing a copy of the letter) again:

"PHILADELPHIA, April 13th, 1864.

"SIR: On the 5th instant I mailed to you the notice of which the following is a copy, requesting the favor of an answer within five days.

"For fear that you did not receive it, I now send this copy of my former note, requesting the favor of an answer accepting or declining my proposition within the five days after your receipt of this present notice, inasmuch as I have other engagements to which I wish to attend. I would also thank you to acknowledge the receipt of my former notice, if it was received by you.

"Very respectfully yours,

R. A. TILGHMAN.

"G. C. GODDARD, Esq.,

"*Solicitor for defendant, 17 William street, New York.*"

Mr. Goddard, the counsel, thus replied:

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NEW YORK, April 15th, 1864.

"DEAR SIR: Yours of the 13th is received, as was yours of the 4th or 5th, to which I think I made answer.

"After the use of your coil apparatus by us was declined by you, we made arrangements which we hope will supersede the necessity of making experiments on yours. Should we change our minds, and desire to experiment on yours, we will advise you; *but at present we do not.*

GEORGE C. GODDARD.

"Mr. R. A. TILGHMAN."

The minutes of testimony taken before the examiner next contained the following:

"MAY 6th, 1864.

"Counsel for the defendant offers to repeat the experiments in the coil apparatus, and on the Scharling apparatus, in the presence of complainant, and make alterations therein to make it conform to complainant's patent, if any are necessary; it being understood that such experiments are to be made at a time which will give opportunity to give evidence in this cause in respect thereto. Also to repeat the experiments on the Scharling apparatus, in complainant's presence.

"Mr. Harding, in behalf of Mr. Tilghman, replies by giving in evidence the offers contained in Mr. Tilghman's letter of April 13th, 1864, to G. C. Goddard, Esq., the defendant's counsel, together with the reply, April 15th, 1864, of the said counsel; and further refers to his offer to repeat the complainant's experiments on the digester, contained in the record of the date of March 24th, 1864. And adds that, as the complainant has a complete apparatus, constructed in accordance with his patent, the successful operation of which he has proved by disinterested experts, and has repeated the offer to exhibit to the defendants, he cannot see any reason why he should occupy time in altering the apparatus now at the defendant's works, especially since the time for closing testimony and the day of hearing will not leave time to reopen this matter."

CAPACITY FOR PRACTICAL USE.

THE DEFENDANT'S SIDE OF THE QUESTION.

I. SCIENTIFIC TREATISES.

Nothing as to the incapacity for practical use of the invention patented to Tilghman was derived from this source.

II. MEN OF SCIENCE.

1. Professor Vanderweyde (already described, *supra*, p. 500,) on

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examination in chief, stated that he had made experiments—Professor Doremus being present—for testing the effects of water on fat at a high temperature and pressure. They were careful to follow the directions given in the specifications of Tilghman's patent, except that they did not use the apparatus specified in it. The experiments were not for the purpose of testing the apparatus described. The witness said :

"The first experiment was : Fat and water were placed in an iron vessel, hermetically closed. This vessel was provided with a few holes to place in the different substances mentioned in the patent, by the melting of which the temperature was to be determined. The experiment was made by raising the temperature to the melting-point of lead; keeping at that temperature for ten minutes, removing the vessel from the fire, cooling it in water and opening it. The result was that the fat was changed into a black substance, which possessed the well-known and very characteristic strong smell of acrolaic acid. [Sample exhibited.] Dr. Doremus kept detailed notes. Chemically speaking, I would declare the sample a mixture of acrolaic, stearic, margaric, and oleic acids with water. Heat was obtained from charcoal.

"The second experiment was in all respects similar to the first, except that the temperature was only carried up to the melting-point of tin. The result was that the fat was not so black looking as in the first instance; but the smell of the acrolaic acid was not less offensive. [Sample of this result exhibited.] This sample is the same as the former. There is a difference in color, produced by the difference in temperature, almost 200°.

"Doubts were entertained by both Dr. Doremus and myself if the experiments were fair, as, perhaps, some parts of the iron vessel might be exposed to a temperature somewhere above the melting-point of lead and tin ; therefore it was suggested by us to procure a bath of melted lead and place the vessel in it, in order to have an equal temperature throughout. This was done. The same experiments were repeated, as in the first instance, with the vessel immersed in the melted lead, taking care that the lead was not heated above its melting-point ; keeping a hose ready to bring in a water-jet into the fire when supposed necessary. In the first experiment in the bath the vessel was full ; in the second it was filled about two-thirds, as doubts were expressed if the patent requires the vessel to be full or not. Of the results I have the samples here. [Samples exhibited.] In both instances the smell of the acrolaic acid was as strong as the results of the first experiments.

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"Q. What caused or produced the acrolein in these experiments?

"A. As the temperature of melted lead corresponds with the boiling-point of fat, and as the boiling of fat is in fact a chemical decomposition of the base of the fat, the glycerin, into acrolein or acrolaic acid, it was anticipated that exposing fat to so high a temperature would have the effect of destroying the glycerin, and to contaminate the fatty-acids with so much acrolein as to make them comparatively worthless. The result fully answered our expectations. Acrolein is produced in no other way than by the decomposition or destruction of glycerin. In the first two experiments there was a little agitation, as the vessel was standing in the charcoal, and from time to time moved up or down to regulate the heat; in the last two experiments there was considerable agitation, as the vessel was rolled about in the melted lead in order to secure a uniform temperature.

"Q. Is the method described in said specification for producing fat-acids and glycerin, in your opinion, practical; and if not, why?

"A. That specification bases the treatment of fats on two principles: one, a special, very ingenious apparatus, about the practicability of which I, however, am much in doubt. The other, the action of water and heat combined on fat in a close vessel. The objection, however, is, that the temperatures prescribed in the specification are altogether too high, and that no provision is made to keep the particles of fat and water in a continually varying contact by means of circulation of some kind.

"Q. Why is this contract and circulation necessary?

"A. It has been ascertained, first by Chevreul and later by other chemists, that fats are composed of one base, glycerin, and three or more acids, stearic, margaric, and oleic, and that the action of water will be sufficient to separate those substances; the water having a strong affinity for glycerin, has the power to abstract this base from the fats; and Berthollot stated more than ten years ago that water will rapidly, at 360° , or slowly at ordinary temperature, resolve all fatty bodies into the acids and glycerin. Circulation is only necessary to hasten the process."

Cross-examined.

"Q. What temperature, in your judgment, would be about as low as it would be proper to use as a practical one for decomposing of fats in the arts for the manufacture of candles?

"A. When water alone is used under pressure, the most profitable temperature ranges from 350° to 390° . When we are below this, the time is too long. When we go beyond this, to above

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400°, 430°, the melting point of tin, 500°, the melting point of bismuth, and 615°, the melting point of lead, as Mr. Tilghman prescribes in his patent, we decompose the glycerin, entirely destroy it, and contaminate the fatty acids with acrolein.

"Q. Prior to the experiment with what you call Mr. Tilghman's mode, state precisely what experiments you had tried to enable you to express an opinion as to the temperature at which fat will begin to decompose into acrolein.

"A. I have never tried any experiments expressly for the purpose to verify this temperature, but I have had plenty occasion, during my labors in different laboratories, to observe this change incidentally, and so has, I believe, every cook; but I was ahead of the cook in making an estimate of the temperature, and always adopting at about 620°, the boiling point of fat, or the melting point of lead, and this view is fully confirmed by the experiments stated.

"Q. Who took part in the experiments you have described, to verify what you call Mr. Tilghman's process? Who was present, and where were they tried?

"A. Dr. Doremus, myself, Mr. Verdin, senior, (Mr. Mitchell's partner,) and two or three men assisting to regulate the fires, &c. The experiments were tried at Mr. Mitchell's factory.

"Q. Was no glycerin left undecomposed in your experiments with what you call the Tilghman process?

"A. In some of the four experiments there was.

"Q. Why was it left undecomposed in some and not in others?

"A. I don't know.

"Q. Why did you not mention in your examination in chief that you sometimes obtained glycerin?

"A. Because I made all my statements by memory. They were quite long, and it is very natural to forget some particular when the attention is not called to it by a direct question, as is done now.

"Q. Did you ever see or try Mr. Tilghman's apparatus as described in his patent?

"A. I like to see any one who saw it in successful operation. I never saw it; and it is the impression generally entertained by those who understand those matters, that it never has been, nor never will be, except by some important modifications, or rather change.

"Q. Name every person skilled in the art of treating fats practically whom you know entertain and have expressed to you this opinion.

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"A. Among the practical men I know is, of course, at the head of the list Mr. Mitchell, Mr. Verdin, and Mr. Verdin, Jr., and all the intelligent employés in their factory. With other practical men I had not occasion to converse on the subject; but no scientific man will doubt that they are right.

"Q. Why do you yourself pronounce Mr. Tilghman's apparatus impracticable?

"A. In the first place, because it does not provide for a circulation sufficient to bring the particles of oil and water in a continually varying contact. In Mr. Tilghman's apparatus the fat is only pushed forward with the water by means of a piston, through a long tube coiled up, escaping at one end in proportion as it is pressed in at the other extremity. The first extremity is closed by a safety-valve charged to stand a pressure of not less than 130 to 150 atmospheres. Now, it is doubtful that if this safety-valve is once opened by the pressure of the force-pump, if not by the expansion of the steam necessarily formed when some exit presents itself, a great deal more of the contents will escape than is forced in at the other end. This is a view which I cannot help entertaining till seeing it to be erroneous by the practical operation of said apparatus, always supposing the apparatus to be constructed exactly as the patent describes it.

"Q. If fat or water are kept in a perfect state of mechanical mixture while exposed to heat, is any other circulation needed to decompose the fat?

"A. You cannot possibly keep fat and water in a mechanical mixture when at rest or simply pushed forward, as is the case in Mr. Tilghman's apparatus. To keep them in a mechanical mixture you have continually either to bring the water from below over the fat above, as is done by the circulation process, or may be done with some pump, or the mixture may be stirred with some kind of wheel, otherwise fat and water will follow the laws of their respective specific gravities; the water below, the fat above.

"Q. Question repeated.

"A. Mechanical mixture alone will, of course, promote the action; but when this is combined with a continual motion and intermingling of the two substances, the action will be greatly improved, and in so far circulation may be considered necessary."

2. *Professor Ogden Doremus*, resident in New York, who began the study of chemistry with Dr. Draper, in the city just named; who had been professor of chemistry in the Brooklyn Medical College, in the New York Medical College, in the College of Pharmacy,

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New York, and was now (1864) professor of the same science in the Bellevue Medical College and the Free Academy in the same city.

"I assisted, in February, 1864, with Professor Vanderweyde, in performing experiments after the method described in the specification to Tilghman's patent of 1854."

[The witness then described at length the apparatus and the experiments.]

"The fatty acids produced were not in a pure state. Acrolein was produced at each operation. It was produced by the high temperature to which the tallow was heated in the presence of water. The temperature, however, was not higher than that indicated in Mr. Tilghman's specification as proper."

Cross-examined.

"Q. What do you know about the condition of that apparatus at the time you tried that experiment, and of its previous use?

"A. I know not what use it had been put to prior to the experiment, but believed it to be in a fitting condition for an honest investigation of the subject.

"Q. Who put the fat into it?

"A. The tallow and water were weighed out by Mr. Verdin, in the presence of Professor Vanderweyde and myself; they were poured into the apparatus by a workman from the story above, Dr. Vanderweyde accompanying him, the other remaining below.

"Q. Were any means tried in your presence to satisfy you whether any remains of fat-acids might be adhering to the interior of the vessel in the last operation in it?

"A. The vessel was simply washed out; I felt satisfied that the vessel was clean; my impression is, it was hot water, but I am not certain.

"Q. Did you test any of the results of that experiment as to the proportion of the fat-acids obtained to the whole mass?

"A. I did not; I made a rough approximation of an analysis, and should judge there was at least five per cent. of acid."

3. *The Paris jury of savants*, already mentioned, (*supra*, p. 494,) at the Exposition of 1855, after stating that Tilghman was the first who had the idea of undertaking, on a large scale, the saponification of fatty bodies by water, and after describing the coil apparatus recommended by him, say:

"Visiting the manufactory of Messrs. Monier & Co., at Villette,

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near Paris, we had an opportunity of seeing the trial of the continuous process in its application to palm oil.

"We are sorry to say that the fatty matter on coming out of the apparatus was not at all deodorized, and, more besides than that, that it gave out a strong odor of acrolein. From the point of view of the quality of the products, this arrangement of apparatus, then, by no means realized the end which the author has proposed. Moreover, in our opinion, the chances of deterioration of a system of apparatus of any kind which works constantly at a temperature capable of exerting a pressure of ninety to one hundred atmospheres are such that it is hardly possible that industry will utilize it, even if the products which it furnishes were irreproachable."

4. *The Jury of the London International Exhibition*, already mentioned (*supra*, p. 498) as having given Tilghman the credit of saponification by water, and declared that De Milly had only much improved it, added that they doubted whether the two methods, "under any modifications up to that time attempted, successfully compete with the sulphuric saponification."

III. MANUFACTURERS OF CANDLES.

1. *Nathaniel Ropes*, resident in Cincinnati, Ohio; a manufacturer of star candles, sometimes called adamantine candles, and of lard oil, a witness of the defendant.

"Q. Describe the old process used in your factory by which you obtained the fatty acids and glycerin, and describe the process now used there.

"A. We formerly worked in an open tub with about thirteen per cent. of lime and about twice that quantity of sulphuric acid; we now operate in close tanks, copper tanks, and use about a half per cent. of lime and about twice that quantity of sulphuric acid, and have operated under a pressure of about 150 lbs. or 160 lbs. to the square inch. But I feel satisfied in my own mind that lime could be dispensed with altogether under a higher pressure, probably 180 lbs. to 200 lbs., and the same result accomplished in about the same time—say six or seven hours; whereas under a pressure of only 150 lbs. it would take from twelve to twenty hours to accomplish a like result, depending upon the quantity of water and the quality of stock used. We have taken twenty hours; but, with a better quality of stock and nearly double the quantity of water, we have accomplished the result in about twelve hours; under a higher pressure the time would be very much shortened. In the twelve-hour operation, with 2,000 lbs. of prime stearin, and the

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same quantity of water introduced, 1,000 lbs. each time, a beautiful result was produced. The separation was perfect, and the stock well crystallized. We have continued on since using a half per cent. of lime, as we prefer doing this to adding a greater pressure than 150 lbs. or 160 lbs. to our works, as we incur less risk from explosion. We have not repeated the operation since then without any lime, not because we don't think them practicable, for I fully believe that under pressure—say of 200 lbs. to the square inch, which would give something like 400° Fahrenheit, I should suppose—as good a result as could be obtained in as short a time as with a half a pound of lime under a pressure of only 150 lbs. to the square inch. This last is, as I say, a matter of opinion, without having tested it.

"Describe your works; also describe the mode of their operation when you first began; under whose superintendence; what changes you made in its operations by experimenting therewith, and how long you experimented therewith before finally adopting your present mode of operation.

"A. We generate steam in an iron boiler, about thirty feet in length and forty inches diameter. Another boiler is connected with our copper tanks by means of iron steam-pipes, with stop-cocks attached, for letting off or on the steam from the first-named boiler; steam is made to operate on the crank inside, that revolves by means of a pulley. The steam agitates the stock inside of these boilers. When sufficiently cooked it is forced off through pipes to an open tub on the second floor. The tank was first brought on in January, 1860; it was introduced under the superintendence of Mr. B. C. Tilghman, brother of the patentee; he operated or experimented for several months; he had never had an opportunity of operating with lard stearin; he was willing, if I would find the stock, to operate without any compensation, and we did so operate for several months; after that, as long as I continued to operate, I was to pay him, and am still to pay him twenty cents a hundred. Mr. Tilghman desired the place and the opportunity where he could exhibit this operation to other manufacturers, and he proposed, if I was not satisfied with the operation and the working of the apparatus, to take it away without expense to me; but I was so well satisfied with it that I purchased of him the tank and its connections probably five or six months after its first introduction—in August, 1860. I have made no particular changes since that time, with the exception of introducing this other tank, and from that time forward we have continued to operate in this and no other way.

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"Q. State when you first introduced lime, and the quantity.

"A. We introduced it from the start; a half per cent.

"Q. Describe the construction and the operation of the mixer or stirrer, and whether or not the mixer is essential, in mixing together the ingredients in your decomposing tanks, to the decomposition of the fats.

"A. The shaft is constructed with wings, or more properly arms, through its whole length, so that when it revolves it keeps the whole of the stock in agitation. To show the importance of this, the arms upon my shaft on the new tank are not sufficiently extended, and the stock would collect at one end of it, and we would have to take off the main head and clear it out. I am now extending the shaft in my new boiler to its full extent, so that the stock may be well agitated throughout the full extent of the boiler. We have had no trouble with the small boiler, which was constructed under Mr. Tilghman's directions. This fault that I speak of was only with my new tank. Under this mode of operation, which I have adopted, the mixer or stirrer is essential to the decomposition of the fat. At the same time other apparatus might possibly be constructed in which the mixer or stirrer might be dispensed with.

"Q. In the boiler furnished by Mr. Tilghman, or in your own tanks, state whether or not you have ever produced free fatty acids or glycerin without the use of the stirrer or agitator just described.

"A. No, sir; we never have. We have never tested it without the use of the stirrer. We never have attempted it.

"Q. State whether or not, after your process is completed, the glycerin-water contains free fatty acids; if yea, how are the free fat-acids separated from the glycerin-water?

"A. I don't think there is any free fat-acids connected with the glycerin-water. They are separated by the process.

"Q. State whether or not water is used in the old process as well as in the new.

"A. It could not be used to the same advantage as under the new. If I understand Mr. Tilghman's process, it is to produce a free fat-acid with one operation, under pressure, either with or without lime; but if so much lime is used as to produce a lime-soap, it goes without his process, right or wrong. Of course water is used in the old process, but in diminished quantities. We dilute our sulphuric acid with water, and a sufficiency is used, of course, to boil up the lime-soap.

"Q. In the practical operation of your process, as introduced by

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Mr. Tilghman, state whether or not you use any other agents than those employed formerly in the old process.

"A. No, sir; none other. No other agents, and these (with the exception of water, which we use largely) in very small quantities.

"Q. State where, if at any place within your personal knowledge, soap or candles are manufactured from free fat-acids produced by the use of water alone, at a high temperature and pressure, without the use of any alkali.

"A. I can't say that I know of any place. I don't know about other establishments, of my own personal knowledge.

"Q. State where, if at any place, the manufacture of free fat-acids by water alone, at a high temperature and pressure, has been tried under the direction of R. H. Tilghman, or B. C. Tilghman, and desisted or discontinued in whole or in part, and afterward some alkali used in the process.

"A. I don't know of any place where it has been tried and been discontinued; that is, voluntarily discontinued.

"Q. State whether or not, in your own factory, in the two operations you have mentioned, of twelve and twenty hours respectively, such was the case.

"A. No, sir; we did not. We never, in our factory, adopted the use of water alone, except with a view of testing the practicability of it. We preferred, in our factory, to use a half per cent. of lime, with a pressure of 150 lbs. to the square inch, rather than to subject our works to the higher pressure which would be necessary to produce the result without lime. It is only with reference to safety that we have not discontinued the use of lime altogether, and subjected our works, boiler and tanks, to a higher pressure.

"Q. State whether or not any one in your factory has ever mixed a fatty body with from a third to a half of its bulk of water, and placed the mixture in any convenient vessel in which it can be heated to the melting-point of lead, until the operation was completed, the products being free fat-acids and a solution of glycerin.

"A. No, sir."

Cross-examined.

"Q. State as nearly as you can, how many pounds of stock you have worked into good stearic acid with the Tilghman process, and without the use of any lime.

"A. About 8,000 lbs. altogether. About 6,000 lbs. successfully; a very good result from 8,000 lbs.

"Q. Are you or not satisfied that the Tilghman process, without the aid of any lime, is a practical process.

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"A. I think it is, sir.

"Q. Could you have continued to work that process without any lime regularly and daily?

"A. I think so, sir; yes, I think so.

"Q. Was not this 6,000 lbs. of stearic acid made into merchantable candles? What was their character?

"A. They were made into candles; they were first rate candles—no better; they were unexceptionable. All were made into candles, with the exception of about 150 lbs., which quantity of the stearic acid was retained for Mr. Tilghman, and a portion of it to be retained at home as a sample of what could be accomplished without the use of lime.

"Q. Can you produce a specimen of that stearic acid?

"A. I have a specimen here. [Marked by the commissioner.]

"Q. How many pounds of stock have you worked with the apparatus and process of Tilghman since you first commenced.

"A. I took it off from my books last night, as you requested. From February 1st, 1860, to April 1st, 1863, 1,127,000 lbs. under that process.

"Q. How many pounds of lime and how many of sulphuric acid did you save by the Tilghman process on each 100 lbs. of stock worked by you, as compared with the old process used prior to the introduction of Mr. Tilghman's process?

"A. Well, we saved about twelve and a half pounds of lime and twenty-five pounds of sulphuric acid on the hundred pounds of stock.

"Q. In your opinion, is it or not owing to the decomposing power of highly heated water under pressure that this saving is due?

"A. Yes, sir; I think so.

"Q. Have you paid Mr. Tilghman twenty cents on every 100 lbs. of fat you have worked since April, 1860? Do you continue to pay him that amount?

"A. I have paid him since August 1st, 1860, twenty cents on every 100 lbs. I think it was from August 1st, 1860, that I contracted to pay him. I have not paid him all, but I am ready to pay him the balance when called on. The arrangement still continues."

2. *Nathaniel Ropes, Jr.*, a witness of the defendant, was also examined, and confirmed, so far as he was examined on the same topics, the testimony of N. Ropes, his father. He stated among other things that in using Tilghman's process the firm generally

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employed one-half per cent. of lime; that a saving of lime and acid was effected by this process, as compared with the old process used prior to the introduction of Tilghman's process, of ten and a half to twelve and a half pounds of lime to a hundred pounds of fat; twice that quantity of vitriol; and that this saving was due to the chemical action of highly heated water under pressure on the fat; and that this chemical agent of highly heated water, under pressure, was not, so far as the witness knew, used prior to the introduction of Tilghman's process.

3. *Florence Verdin*, a partner of the defendant, already described, manufacturer of stearic acid and candles:

"I have tried several experiments in which I followed the specification of Tilghman's patent. There was very little glycerin and it was very poor. The acrolein had injured it so much that it would not have been salable. The fatty acids also were very poor; affected by the acrolein. Candles made from these fatty acids might be freed from the smell of the acrolein with additional expense. The value of the fatty acids as they come out of the vessel would be impaired in value at least one cent per pound.

"The process described in the specification would not in my opinion be of any value to a manufacturer of candles or of stearic acid. The use of the apparatus, as there described, would not be safe to the operatives in charge of it. There would be danger of explosion from the heat and pressure specified. I think I should make my will before I would operate with them. With the heat and pressure mentioned in the specification, the valves therein mentioned will not keep tight. The process described in that specification is not anywhere adopted that I know of."

Cross-examined.

"Q. What heat are said valves exposed to in the apparatus described in complainant's patent?

"A. The melting-point of lead.

"Q. Examine the drawing now shown you of the complainant's patent, and state what valves in said apparatus are exposed to any heat above 212°.

"A. There are none. I was mistaken. I had seen the drawing before, but was under the impression that the valves were nearer to the boiler."

Re-examined.

"Q. From your present knowledge of the position of the valves in the complainant's drawing and the mode of operation, is or is

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not the complainant's apparatus a practical mode of accomplishing his object?

"A. I think not."

4. *C. H. Grant*, resident in Philadelphia, of the firm of C. H. Grant & Co., manufacturers of adamantine candles, a witness of the defendant, testified, in substance, among other things, thus:

"We now use the distillation process, with the use of sulphuric acid. From the fall of 1859 to nearly the beginning of 1862, we used the Tilghman process, under a license from him, but not continuously. Our interests are in his favor. We did not employ the coil apparatus, but a cylindrical digester with spherical ends, procured from Mr. Tilghman. We used it in connection with high pressure; 160 lbs. to the square inch. We used the process a portion of the time without lime. The fat during its treatment was agitated by paddles on a shaft running through the digesters, from end to end. We voluntarily abandoned the use of the Tilghman process, because we found it was costing us too much. The process was unprofitable; that is to say, the profits were not equal to what they would have been by the sulphuric acid process. Mr. Tilghman was at our manufactory frequently, and suggested all the modes of treatment. We expected, as well as I can recollect, to produce decomposition by water alone in about six hours; but I think we were about twice that time. Except, possibly, by double hot pressure, which we never tried, we could not by the use of water with heat and pressure alone produce such a decomposition as would make merchantable candles. It is my opinion that a person of ordinary skill in the branch of manufacture to which this patent relates, with the patent as his guide, and without experiment, could not decompose fat by water, heat, and pressure so as to produce a valuable result."

Cross-examined.

"There was a difference of opinion between myself and my partner as to the policy of abandoning Tilghman's process. I always advocated the process, and was unwilling to abandon it so long as there was the least hope of success. Since we abandoned the process, it has not been generally abandoned by other manufacturers. I know of no manufacturers in the United States who are now working by the old lime-saponification process, though there may be some. I cannot name any manufacturer in the United States, besides ourselves, who has abandoned the use of Tilghman's process after having once adopted it. I do at this moment believe

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that fat can be decomposed by the action of water, at a high temperature and pressure, into fat-acids and solution of glycerin. I believe that the intimate mixture of the fat with the water is an important circumstance in producing this decomposition. I believe that, the higher the temperature and pressure employed, the more quickly the decomposition will be produced. I believe that the pressure should be made to correspond with the temperature employed, so as to prevent the water escaping as steam. Except agitation, which is of use only to produce mixture of the fat and water, I do not believe that any conditions besides intimate mixture of fat and water, a high temperature, and a pressure sufficient to prevent the water from escaping as steam, are necessary to produce the decomposition of fat into fat-acid and glycerin. Which of these three conditions we were unable to produce in the apparatus we used, I don't know. If we had used twice as much water, or continued the operation twice as long, or taken a second charge of water, I believe that we would have made better decomposition."

5. *Mr. E. S. Wayne*, manufacturer of candles in Cincinnati, a witness of the defendant, testified that Tilghman's process with the coil apparatus was practical but not economical.

6. Soon after the issue of his patent, Tilghman began to modify the apparatus described in his specification. Of this it did not appear that he made any secret. One of his letters to Messrs. Thomas Emry & Son, manufacturers of candles in Cincinnati, produced by the defendant, was thus:

"LONDON, June 25th, 1856.

"GENTLEMEN: I have received from Mr. Davenport your favor of 30th May last. Our experiments in the factories here and in Paris have shown that, on the large scale, the decomposition of fats by water is more conveniently effected by modifying the apparatus originally proposed, so that the fat and water are exposed to a comparatively lower heat and pressure for a longer time, instead of a very high pressure for a few minutes; and a considerable quantity of material is *treated at one charge, in an ordinary steam boiler*, lined with lead or copper, and provided with *an agitator*, in place of using the continuously working pumps and coil of pipes. At a pressure of 225 lbs. per inch, tallow, or palm-oil, or lard stearin is completely decomposed in five hours. In the course of a few months we shall probably have going on at Price & Co.'s works an apparatus on the above plan capable of treating *several tons* per day. Until my process is in actual use in England I have decided not to begin its introduction into the United States, and

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therefore cannot at present reply to your request as to terms of sale. As soon as *it is well established here* I intend returning home, and will immediately communicate with you. . . .

"I remain, very respectfully, yours,

"R. A. TILGHMAN."

7. *Mr. G. F. Wilson*, already mentioned as the managing agent of Price & Co.'s candle works in London, (which company, as has been mentioned, paid to Tilghman £1,000 sterling a year,) and whose statement in a public lecture delivered by him in January, 1856, that Tilghman's discovery, as carried out by his coil process, would draw from all the admission that it was a beautiful, original chemical idea, well carried out; in that same lecture, and in immediate sequence to this statement, added:

"It has yet to be proved how far it can compete successfully with distillation."

Adding further:

"We have made an arrangement with Mr. Tilghman which will give us the means of testing its commercial merits."

Mr. Wilson, in a public lecture delivered previously, (of September, 1855,) after referring to the fact that until of late times no practical modes of obtaining glycerin other than in an impure state had existed, said:

"A new process for decomposing neutral fats *by water under great pressure coming under our notice*, led us to look again more closely into our old distilling processes, and the doing this showed, what we had often been on the brink of discovering, that glycerin might be distilled.

"In our new process the only chemical agents employed for decomposing the neutral fat, and separating its glycerin, are steam and heat, and the only agents used in purifying the glycerin thus obtained are heat and steam; thus all trouble from earthy salts or lead is escaped. Distillation, however, purifies the impure glycerin of the old sources."

8. *Mr. Tilghman*, who was examined as a witness, and who stated the fact of the agreement to pay him £1,000 sterling a year, stated further that though he had been in some of the factories of Price & Co., he had not been in all, nor had he been in *all* the parts of all the factories which he did visit; and being requested to speak "of his personal knowledge" of what processes, &c., Price & Co. used, stated that he had no personal knowledge what-

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ever as to what process they employed for decomposing fats, what form of apparatus was used by them, or what degree of heat.

9. *Monsieur Monier*, whose *stearinerie* had now apparently failed or otherwise come to an end, thus testified:

"We made numerous experiments immediately after signing the contract. Mr. R. A. Tilghman was present and worked with his brother during ten or fifteen days. Mr. R. A. Tilghman, on leaving the factory, left his brother to represent him with my firm, and to continue and direct alone the experiments described in the patents. The results of these first experiments, as well of those which followed, were entirely useless and productive of no good. They took place in our factory at Villette, near Paris, by means of a little apparatus brought from London by Mr. Tilghman. [Described by the witness, and obviously the coil apparatus.] It was placed in a furnace of fire-proof brick and received all the heat of the furnace, the flame of which completely enveloped it, and which brought it to an excessive heat, of which it was impossible to ascertain the degree of intensity, as there was no instrument which would indicate the degree of heat. A suction and force-pump was firmly established and fixed at some distance from the apparatus. This pump was worked by hand, and being connected with one end of the coil in the cast-iron block, threw into the said coil a mixture of water and fatty matter contained in a vessel from which it drew it, and forced it to traverse all the turns of the coil, and forced it out of the other end of the said coil incased in the block of iron, which was, as I have already said, heated to an excessive degree. Although the mixture of water and fatty matter was, during its passage in the coil, subjected to a temperature which I estimate to have been above five hundred degrees (500°) and a pressure of more than twenty atmospheres, the decomposition of the fatty matter was never complete, and never produced fat-acids and glycerin, but only an altered fatty matter, which, when washed, produced acrolein to such a point as to fatigue the workmen who assisted at the experiments. The experiments, in conformity to the indications of Mr. Tilghman, possessor of the patent for making fat-acids and glycerin, lasted about six months. The first fifteen experiments were made by the Messrs. Tilghman, aided by two workmen, in my presence, and they alone directed the work; and after the departure of Mr. R. A. Tilghman, the patentee, they were all directed by his brother. None of the numerous experiments succeeded. After the failures with the little apparatus brought from London by Mr. Tilghman, his brother caused to be

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constructed successfully three apparatus. The first was composed of a hollow iron tube, and was made by Perkins, in London, and put in a bath of melted lead, in order to always have at least three hundred degrees of heat. The second, which was also composed of a hollow iron pipe, was constructed in Paris, and put in a bath of melted zinc, in order to always have at least five hundred degrees of heat. The third, and last, was constructed with the Perkins pipe, divided into three equal parts, of which each part was placed in a block of cast-iron, by Davidson, iron founder at La Villette, and under the superintendence of Mr. Tilghman's brother. This last apparatus was placed in a furnace of fire-proof brick, constructed upon the plan of Mr. Tilghman's brother and under his direction, and at a temperature the elevation of which I never determined, but which certainly much surpassed that of melted zinc. It is easy to see that Messrs. Tilghman paid no attention to the process patented, but made at our factory and at our expense, not serious experiments, but trials to find the means of overcoming the difficulties which arrested them. This is shown by the fact that all which Mr. Tilghman demanded was instantly given him, and that he often used two kilogrammes of fatty matter in one day, and always without any results. I have no plans or drawings of the apparatus which Mr. Tilghman had made. The experiments made at our factory by Messrs. Tilghman cost the firm of Monier & Co. more than forty thousand francs, counting the money given to the brother, which was, I think, between 12,000 and 15,000 francs. The contract made between Mr. Tilghman and our firm was annulled by common consent, because the process never produced fat-acids and glycerin. I affirm that it is impossible to decompose fatty matter and obtain fat-acids and glycerin by the method indicated in Mr. Tilghman's patent.

"Some time after the first experiments were discontinued and the first contract annulled with Mr. Tilghman, Mr. De Fontaine Moreau, in whom we had great confidence, announced to us the return to Europe of Mr. Tilghman with a new process, based upon the principles of the method already patented, and urged us earnestly and decided the firm, much to my regret, I assure you, to join the firm of Charles Leroy & Durand, candle manufacturers at Paris, to whom he had already spoken, for the trial of the new process, the success of which he said was certain, as Mr. Tilghman had already obtained admirable results in the United States. A new contract was made between Mr. Tilghman and my firm, representing also Messrs. Charles Leroy & Durand, upon the same basis as the first, Mr. De Fontaine Moreau again representing Mr. Tilghman, the

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patentee. New experiments were made at La Villette by Mr. Tilghman's brother during two or three months, and, like the first, produced neither fat-acids nor glycerin.

"In my opinion, a mixture of fatty bodies and water, exposed in a close vessel at a high temperature, and under a strong pressure, cannot decompose the fatty bodies to the point of producing fat-acids and glycerin."

10. *Mitchell offered to show to the complainant operations with an apparatus* alleged by Mitchell to have been made in accordance with the specification in the complainant's patent. Which offer, for certain reasons stated, the complainant declined. [The history of this matter appears *supra*, pp. 511-513.]

REDUCTION TO PRACTICAL USE.

REBUTTAL BY THE COMPLAINANT.

1. To rebut the testimony of Monier given in 1867, Tilghman proved that suspecting that a certain De Milly, a large manufacturer of candles in France, was using his patent, he had requested his agent, Mr. Fontaine Moreau, to inquire how this was; that Mr. Fontaine Moreau had inquired of Monier, and that Monier had thus answered him:

"SOCIÉTÉ GÉNÉRALE DE STEARINERIE,
"LA VILLETTÉ (near Paris,) July 17th, 1857.

"MY DEAR FRIEND: I received your letter of yesterday. Not only does De Milly work by the Tilghman process, but also he has sold to many candle manufacturers, amongst others to MM. Petit & Lemoult, the right to work his patent in France, in their factory at Grenelle. Mr. De Milly has also sold in Belgium and in Austria, so that while the Messrs. Tilghman are in London and suspect nothing, Mr. De Milly reaps a harvest in selling that which he has stolen from them. But what can any one here say of all this so long as the Messrs. Tilghman are content to suffer themselves to be robbed? You know De Milly. He does not lose his time. So he is more and more eager to offer his processes. He has offered them to us many times. If the Messrs. Tilghman wish to draw any profit from their patent, they ought to prosecute him for infringement as soon as possible. Let them think of it seriously. I am too much interested in the question to admit of my giving them advice which might perhaps be misinterpreted. I must be content with wishing that Mr. Tilghman should have the courage to defend his intellectual property, that is to say, his honor.

"Your very devoted,

MONIER."

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2. In regard to Tilghman's inability, when requested by the defendant's counsel, cross-examining him as a witness, to state on his "personal knowledge" what processes, forms of apparatus, and what degrees of heat were used at Price & Co.'s factory, it appeared by the testimony of the defendant, Mitchell, that he, Mitchell, before July, 1865, which was before this suit arose, had asked Tilghman *why* he had not personally inspected their mode of working, and *why* he did not know how they worked.

"He stated in reply that Mr. Wilson, who was the managing director of that company, was trying to invent a process of his own, and would not allow him to inspect it."

3. One of the defenses set up in the answer, it will be remembered, was, that the apparatus described by Tilghman as the one which he believed was the best to carry his invention into effect was dangerous, from the degree of heat required. On that point this testimony was given:

Joseph Nason, mechanical engineer and constructor of steam apparatus for warming buildings, for heating evaporators, &c.

"I have had two years' experience as an assistant to Mr. Perkins, during which I have applied the apparatus to many purposes requiring very high pressures and temperatures, among which I will mention the generators of steam for Perkins's steam-gun, heating-ovens for baking bread, and for heating various processes requiring temperatures as high as 600° Fahrenheit and upwards. I cannot state precisely the maximum of temperature at which such an apparatus could be used without injurious or dangerous results, but I can say positively not less than 650° or 700°. I have known the apparatus, working at the temperature of 600° and upwards, to be in daily use for many years without injurious or dangerous results, without inconvenience, and without any considerable depreciation. With ordinary care I should consider an apparatus, constructed in accordance with the descriptions and drawing of the coil apparatus in the patent of Tilghman, a perfectly safe practical apparatus for heating the materials to a lead-melting heat. I do not see that any practical difficulty would be incurred in its operation. So long as the temperature be limited to the melting-point of lead, an apparatus as strongly constructed as those with which I have been familiar, would be almost absolutely secure against explosion. I should consider such an apparatus used at lead-melting heat, much safer than an ordinary form of steam-boiler at a pressure, say of 180 lbs."

Statement of the case.

REDUCTION TO PRACTICAL USE.

EVIDENCE CLAIMED BY BOTH PARTIES.

In addition to the evidence which has been grouped, as on the preceding pages, (from page 493 to page 531,) as tending apparently to sustain either the complainant's case or the defendant's, there was some evidence which perhaps it was not quite easy to say, until the construction of the patent was settled, which side it sustained. It was claimed by each side. Such was,

1. *A statement by Mr. Wilson*, already more than once mentioned. In the public lecture referred to on page 499, as given in January, 1856, he said :

"I went with my chemist-assistant, Mr. Payne, to see Mr. Tilghman's little apparatus at work, and in the course of some experiments which it led us to try, or rather to try over again, it struck me that steam passed into the fat at a high temperature should effect by a gentle process what Mr. Tilghman aimed at effecting by a violent process—the resolving of the neutral fat into glycerin and fat-acids. We proved that this was so, and that the glycerin distilled over in company with the fat-acids, but no longer combined with them.

"In July, 1854, we took out a patent for this process, by which many hundred tons of palm oil and other fats have now been worked, and which has given to the arts and medicine a body never before known, either in France or here, even in the chemist's laboratory—glycerin which had passed over in the form of vapor without a trace of decomposition."

2. In July, 1857, Tilghman introduced into Price's candle factory in London, an *ordinary long boiler with a revolving stirrer*, working at a temperature of about 400° Fahr., (225 pounds pressure,) and having a capacity of treating two and a half tons of fat daily. This appeared by a letter of his own, given in evidence, like the one just above by the defendant.

"LONDON, July 20th, 1857.

"To M. DE FONTAINE MOREAU.

"DEAR SIR: In compliance with your request, I proceed to describe the present state of the apparatus for decomposing fats, as it is now being worked at Messrs. Price & Co.'s.

"As I have before mentioned to you, it consists of a boiler thirty-two inches diameter, and thirty feet long, made of iron nine-sixteenths thick, and lined with copper.

"It is heated by an interior copper serpentine, 'a retour d'eau,'

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which is supplied with steam from a smaller tubular boiler, (thirty-two inches diameter by ten feet long, with eighteen flues, three inches diameter.) It also has a tube pierced with holes to inject free steam. The apparatus is worked at a pressure of from 200 lbs. to 225 lbs. per square inch, (fourteen to fifteen atmospheres;) it is charged with two and a half tons palm oil and three-quarter tons water, and the oil is perfectly decomposed in four and a half hours after the above pressure is attained. *The decomposition would be effected in shorter time if a larger proportion of water was employed, and if agitation and mixture of the materials was produced by the injection of free steam from the pierced tube,* but as one object is to get the glycerin in a strong state, (the demand for glycerin being just now greater than they can supply,) they prefer for the present to work it as described.

"Price & Co. are now thinking of putting up another apparatus, which will probably be constructed to work at a pressure considerably higher than above mentioned, so as to shorten the time of decomposition, and also will be made to work continuously, so as to avoid loss of time in filling and emptying.

"Very truly yours,

"R. A. TILGHMAN."

This apparatus continued at work at Price's factory down as late as 1865, as appeared by a letter of Tilghman admitted in evidence.

"PRICE'S PATENT CANDLE COMPANY,

"LONDON, July 13th, 1865.

"R. A. TILGHMAN, Esq., Philadelphia.

"DEAR SIR: I thank you for your letter of 19th of June, which I have laid before the directors to-day; and they will be much obliged if you will, as you kindly offer, procure for us tracings of the working drawings of the apparatus now in use for your process in America, and most approved of by you.

"You are right in supposing that the apparatus we have now at Battersea is just what you saw or heard about when you were here. There is a stirrer in each vessel, but plainly insufficient for the proper contact of the water with the fatty body. I should think we may very properly use our present digesters for the outer iron vessels of your apparatus, putting them, of course, upon their ends. They are very much the shape of the vessels you describe. You do not mention what quantity of water you put to the fat. I should think it might be well to put it in at two doses, drawing off the first where it has taken up the bulk of the glycerin, and

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then finishing off with fresh water, to take the last part of it away, using this water again as the first water for a fresh charge of fat; but very likely you already do this. The whole of your letter now being replied to, as well as of the previous one, was of much interest to us. If any further matters occur to you as worth mentioning in connection with the working of the process on your side, we shall be much obliged by your stating them when you write again.

"I am, dear sir, yours, faithfully,

"J. P. WILSON."

On the 15th of May, 1860, Tilghman took out another patent. The specification and claims in that patent were thus:

"Be it known that I, Richard Albert Tilghman, of Philadelphia, Pennsylvania, have invented a certain *new and improved method* of decomposing fatty and oily substances, and I do hereby declare that the following is a full and exact description thereof:

"My invention *relates* to the process of obtaining free fat-acids and solution of glycerin from fatty substances by the action of water at high temperatures and pressures, and it is applicable either when water alone is used, or when, in addition to the water, a portion of alkali is used to aid the chemical action.

"I have observed, in working this process, that though the action of the water in extracting the glycerin from the fat is rapid at first, when the water is fresh and the fat contains all its glycerin, yet as the decomposition advances, and the fat gradually loses and the water takes up the glycerin, that the decomposition becomes slower and slower, so that to extract the last portion of glycerin from the fat with a moderate quantity of water requires a considerable time when the lower range of pressures are used.

"Now if we use a large proportion of water to a given quantity of fat, the decomposition may be made sufficiently complete in a moderate time; but this has the inconvenience of occupying a considerable portion of the vessel or apparatus used, and thereby diminishes the quantity of fat that can be treated therein.

"Now, my invention consists in *applying* the water to the fat in *several successive portions*. I remove the first portion as soon as it becomes partly saturated with glycerin, and I add successive portions of fresh water to the partly-decomposed fat, which fresh water is more active in taking up the last remaining glycerin of the fat, and *thereby I render the decomposition more rapid and complete, and can treat a larger quantity of fat in a given apparatus.*

"My invention can be applied to any of the different forms of

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boilers or tanks used for the decomposition of fats by water at a high temperature or pressure, either with or without lime, which are now well known, and need no detailed description. Instead of putting nearly an equal or more than an equal bulk of water to the fat, I put in say only one third of the bulk of the fat, and after this has been stirred up with the fat, and exposed to a high temperature and pressure during some time, (say from two to three hours, if working at from 120 lbs. to 150 lbs. per square inch,) I allow the water to settle, and blow it out of the tank. A similar quantity of water, which has been previously heated up to the working temperature of the apparatus in a separate close iron vessel, is then forced into the tank by steam pressure, and is stirred up with the fat, and after two or three hours' mixture is settled and blown out as before; and this is repeated until samples show that all the glycerin has been extracted and that the fat is well decomposed.

"I will now describe another method of applying my invention to practice, whereby the operation is made continuous; that is, the raw or neutral fat, either by itself or previously mixed with a small quantity of alkali, is introduced in a continuous stream, or nearly so, at one end of the apparatus, and the decomposed fat or fatty acids issue continuously, or nearly so, from the other end of the apparatus, while at the same time the water enters where the fat-acids issue, and following the opposite route to that taken by the fat issues as a solution of glycerin from that part of the apparatus where the raw fat enters. By this method the fat which has lost nearly all its glycerin is brought in contact with fresh water containing no glycerin, and the water partly charged with glycerin comes in contact with raw fat containing all its natural glycerin.

"In the arrangement of this form of apparatus there are two features which form distinct parts of my invention. As fat and water dissolve each other, to a very slight extent, their action upon each other is much accelerated by large surface of contact. This large surface of contact has generally been produced by a mechanical agitation and mixture of the two liquids; but as this mixture is almost incompatible with a perfectly continuous form of apparatus, I have devised plans whereby these advantages of large contact and renewal of the water may be obtained by other means, either in continuous or intermittent forms of apparatus.

"1. I arrange the fat and water in numerous shallow layers, so as to obtain large surface of contact.

"2. I cause the fat and water, arranged in shallow layers, to

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flow in opposite directions, so as to bring fresh water in contact with partly decomposed fat.

"The following is a description of the *apparatus*, it being understood that if any alkali is used, (which is generally in but small proportions, say one-half to one per cent. of the fat,) it should previously be combined with the fat."

[Here follows a description of the apparatus, and the schedule proceeds:]

"What I claim as my invention, and desire to secure by letters patent, is—

"In the process of decomposing fats into fat-acids and glycerin by means of water at a high temperature or pressure, either with or without the presence of an alkali,

"1st. Applying the water in several successive portions, and removing those portions when partly saturated with glycerin.

"2d. Arranging the fat and water in shallow layers, so as to give an increased surface of permanent contact between them.

"3d. Causing the fat and water arranged in shallow layers to flow in opposite directions, so as to bring fresh water in contact with the partly decomposed fat.

"R. A. TILGHMAN."

In 1867 ten factories in the United States were working the water process under license from Tilghman, but none of them probably with heat so high as 440° Fahr., or without the aid of certain amounts of alkali, as described by C. T. Jones, *supra*, p. 509.

III.

AS TO THE MATTER OF INFRINGEMENT.

THE COMPLAINANT'S SIDE OF THE QUESTION.

On this matter, Professors Booth, Rogers, Genth, Bridges, and Gibbs, all testified that the defendant's process was identical with Tilghman's.

"It is the same," said Professor Booth.

"I consider it to be identical," said Professor Rogers; an expression iterated by Professors Bridges, Genth, and Wolcott Gibbs.

THE DEFENDANT'S SIDE OF THE QUESTION.

Professor B. H. Rand, lecturer on chemistry at the Franklin Institute, from 1853 to 1862; professor of chemistry in Philadelphia College of Medicine, 1853 to 1858; in the Medical Department of Pennsylvania College, 1859 to 1861; in the Central High

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School, 1859 to 1864; and since 1864 in the Jefferson Medical College:

"There is, in my opinion, a great difference in the mechanical surroundings and conditions forming part of the processes of the complainant and defendant respectively. The process of the complainant requires a very high temperature. It also requires vessels of very great strength, 'the working pressure' being stated as not likely to exceed '2,000 lbs. to the square inch.' The conditions of complainant's process could not possibly be realized in the defendant's apparatus. The complainant's patent speaks of subjecting the mixture, in the continuous apparatus, at the desired temperature, for ten minutes; the defendant's requires as many hours. Again, the requirements of the patent, that 'the vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam,' and 'no steam or air should be allowed to accumulate in the tube, which should be kept entirely full of the mixture,' do not exist in defendant's processes, because the vessels employed by him are not full, or nearly so, and steam, the source of the heat used, is constantly present during the continuance of the processes. In my opinion, therefore, the mode of working in the two processes is essentially different.

"Again, it is my understanding of the patent of the complainant, that it describes and claims a process in which the decomposition of fats is effected by the sole action of water in the liquid form, highly heated in close vessels.

"*With this understanding of it, it is my belief that defendant's processes are substantially different in a chemical sense.*"

It is obvious that on this matter of infringement Professor Rand assumes the close construction of Tilghman's patent to be the true one. Doubtless experts of the other side assumed the broad one to be. So that here, as in a large degree in the question of practicalness, the construction of the patent was the fundamental question.

In this view of Professor Rand concurred—

Mr. E. S. Renwick, residing at Milburn, New Jersey, and occupied principally as expert in the trial of patent causes, and in soliciting patents, and

Mr. E. S. Wayne, of Cincinnati, chemist and druggist, engaged practically and theoretically for the last thirty years in chemistry, formerly professor of chemistry in the Ohio Medical College, Cincinnati, and of pharmacy and chemistry in the Cincinnati College of Pharmacy. Mr. Wayne, after stating that he was fully satis-

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fied that the patent of Tilghman described a different process from that of Mitchell, because, among other reasons, "*it describes a different apparatus,*" added on a different topic:

"I am of the opinion that the liquid water in Tilghman's process is of itself of no value beyond furnishing the elements of water for the decomposition, and that heat alone is the agent causing the decomposition of the fats by water; and the pressure he claims and uses is the only way to obtain the heat necessary for this decomposition. The water is only necessary so far as it furnishes the elements of water in chemical equivalent to the fat to form respectively fat-acids and glycerin. Steam in its chemical relations in this decomposition is equivalent and identical with water. All that steam requires is the same temperature. This is given to it by superheating* it to the point necessary for the decomposition. Fat-acids and glycerin is the result. Could water be heated without pressure to the temperature necessary for the decomposition of fatty bodies, the same result would follow as with the use of pressure, namely, fat-acids and glycerin.

"Hence, I can perceive that there is no new discovery of the decomposition of fatty matters by the agency of water alone, and conceive the facts in relation to it have been known, mentioned, and experimented with prior to the complainant's patent. Water and steam for the decomposition of fats require a high temperature, and the higher the temperature the more rapid the decomposition; but the introduction of another agent in the decomposition, such as an alkali, or water containing a small percentage of sulphuric or sulphurous acid, or neutral lime-soap, the decomposition of fats into fat-acid and glycerin will take place at a much lower temperature than can be effected by steam or water alone."

In regard to the range of heat allowed by Tilghman's patent Renwick said :

"*The temperature relied upon is one exceeding the melting point of tin, (440° F.,) and not exceeding the melting point of nitrate of potash, (660° F.,) the temperature of the melting point of lead (612° F.) being the temperature for general practice.*"

Mr. Justice NELSON, in giving the opinion of the court below, held :

* By "superheating" steam is meant applying heat directly to steam which has been already generated by the action of heat on water. This latter sort of steam is called "saturated steam;" the former, "superheated steam."—REP.

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"1. That Tilghman's invention consisted of a *process* for producing free fat-acids and solution of glycerin from fats and oils.

"2. That 'for this purpose he subjects the fatty or oily bodies to the action of *water* at a high temperature and pressure, so as to cause the elements of these bodies to combine with water, and thereby obtain at the same time free fat-acids and glycerin.'

"3. That Tilghman proposes to do this in any convenient vessel of the requisite strength, and that although under the law he describes two vessels or apparatus for doing it, there is *no claim* for any special vessel or machine.

"4. That Tilghman's patent does not require that the vessel should be absolutely *full of water* and fat.*

"5. That Tilghman's patent does *not require the use of a heat* so high as melting lead, but merely prescribes it as a maximum, and announces that no fixed degree of heat can be given, as the different fatty or oily substances that may be used will require different degrees, and that by starting the vessel at a low heat and gradually increasing it, the best temperature may be ascertained for the particular substance used.

"6. That upon a proper interpretation of the patent, the process could be and had been proved to have been carried into successful operation by both the means pointed out by the patentee.

"7. That 'prior to the date of Tilghman's invention there were but two modes known or in practical use for decomposing fatty substances, and obtaining from them fatty acids and glycerin. One called the lime saponification, and the other known as the dis-

* "We cannot agree," said the court, when speaking of this point, "that a fair construction of the specification tends to the conclusion either that the vessel was to be entirely filled or that no steam was to be permitted in it. No doubt it is true, as urged for the defendant, if thus filled and the vessel closed, and the contents heated to the point of melting lead, or under a pressure that would prevent the existence of steam, the process would be utterly impracticable; and doubtless the patentee knew this would be the result as well as any of the experts. It would require but the commonest knowledge and experience in the business of life to reach such a conclusion. This moderate degree of knowledge, at least, should be kept in view in construing the general terms of the description."

"Besides, the patentee does not direct that the vessel should be entirely filled. This is an inference of the learned counsel, from the direction that the vessel must be closed and be of great strength, so that the requisite amount of pressure be applied to prevent the conversion of the water into steam.

"All that was intended, as is apparent from the context, by the patentee was that the pressure should be so great as to prevent the body of the water in the vessel from passing into steam, as the heated water was the element that separated the fatty acids and glycerin. That there would necessarily be some steam must have been obvious to the patentee as well as to any one of common observation."

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tillation process,' and that they were different from patentee's, more expensive and tedious, and have generally gone out of use in this country and England since appellee's invention.

"8. That Tilghman was the first person that discovered the chemical fact that fatty or oily substances could be decomposed, and that the fatty acids and glycerin separated by the action of water at a high temperature and under pressure.

"9. That it is immaterial to inquire whether defendant's vessel or machinery is similar to that described in Tilghman's patent; they constitute no part of his invention.

"10. That the defendant has manufactured fat-acids and glycerin from fatty bodies by the action of water at a high temperature and pressure, according to the process explained by appellee in his specification, and hence had infringed his patent."

Mr. Justice NELSON accordingly decreed for the complainant.

The case afterwards came up before Judge Blatchford on exceptions to the master's report or otherwise. That learned justice on different occasions said :

"It is manifest that the defendant decomposes fatty bodies into fat-acids and glycerin by the action of water at a high temperature and pressure, and thus uses the plaintiff's process."

As to Mr. Justice Nelson's views, "that the plaintiff's specification did not require, either that the vessel containing the mixture of water and fatty matter should be entirely filled therewith, or that no steam was to be permitted in it," he said:

"On full consideration, I concur in his views, and have no doubt that his interpretation of the specification in regard to them was correct."

To the defense of want of practicalness he said :

"The defendant has entirely failed to show that the plaintiff's process, carried out as described in his patent, is not practicable or practical. It was put in practical operation in London in 1857, a patent having been taken out for it in England by the plaintiff, January 9th, 1854. It was put in operation in Cincinnati, Ohio, in 1860, and has been in use, under license from the plaintiff, in the United States, ever since, there being ten factories in the United States working under such license."

On the other points he agreed with Mr. Justice Nelson, and in conclusion said :

"The great merit and value of the plaintiff's invention, not

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only in the manufacture of candles, but as a process for obtaining pure glycerin for use in the arts, are shown by evidence. The case is a clear one, on all points."

Decrees were finally entered for Tilghman for \$335,661, as the amount of the profits, with interest, which the defendant had made by infringement.

The merits of Tilghman's patent had also been before Justices McLean and Leavitt, in Ohio, in *Tilghman v. Werk*, October, 1860. There was a concurrence of opinion between those judges about the case, and Mr. Justice McLean was to deliver the opinion of the court in it. His death having supervened, it was delivered in February, 1862, by Leavitt, J. That learned justice said, that he had no "hesitation in concluding that the attempt to invalidate the plaintiff's patent for want of originality had wholly failed," and that it was shown by "actual and successful experiments," made alike by experts and by the practical manufacturers, Ropes and Grant, who made no mention of any difficulty from a want of exactness in the specification as to the degree of heat required, that free fat-acids and solution of glycerin could be produced by Tilghman's process. Referring to the language of the specification in reference to the temperature of the heated water, he said:

"The specification seems to be sufficiently explicit. There is a precise degree of heat, the melting point of lead, 612° Fahr., recommended and prescribed as sure to produce a good result in changing common fatty bodies to acid and glycerin; and a lower temperature, the melting point of bismuth, 510°, when palm oil or similar substances are to be operated upon. And it clearly does not render the specification liable to objection for want of certainty and clearness, that the patentee states that the degree of heat may be carried above these figures without injury. Nor is the sufficiency of the description impeached by the fact that the desired result has been produced at a lower temperature of water. There is a fixed rule given which may be safely followed, while it is made known that the manufacturer may safely depart to some extent, from this rule, if from experiment and a just exercise of discretion it should be expedient to do so.

"DECREE ACCORDINGLY."

The matter came up also subsequently to all these decisions before Mr. Justice Emmons, in the Ohio Circuit Court, in the cases of *Tilghman v. Werk*, *Kirby et al.*, and of *Tilghman v. Shillito*. That learned justice there said, that "were he to consider this

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matter uninfluenced by precedent, he feared that he should be compelled to give the patent a more limited construction than it had received," and to hold "that the claim included only those higher degrees of heat at which lead and other substances mentioned in the patent will melt."

He added, however, that without a violation of judicial propriety, he could not disregard the judgments of his own court and of the co-ordinate one in New York, adding :

"Especially is this so where the judge delivering the opinion has taken so leading a part in all the discussions, on the subject in the court of last resort."

It was from the decrees in New York that the case was now here.

Messrs. W. M. Evarts and C. M. Keller, (with whom was Mr. S. D. Law,) for the appellant:

I. *What is the construction of the patent?*

These facts of science, it is submitted by us, were known prior to the year 1854, the date of Tilghman's patent.

1. That water is composed of two gases, oxygen and hydrogen; the former of which acidifies what it unites with, and the latter of which hydrates what it unites with.

2. That fats are composed of fat-acids, to wit: 1st. Of stearin combined with oxide of glyceryl as a base, (the compound being called stearate.) 2d. Of margarin combined with the same oxide and a base, (the compound being called margarate;) and 3d. Of olein combined with the same oxide and a base, (the compound being called oleate.)

3. That if you take away the oxide of glyceryl from the stearin, margarin, and olein, you must, if you still want the fat-acids, supply some other oxide with which they may unite and so become again acidified. And so too if you want glycerin, you must supply something to hydrate the element of glyceryl, (which hydration of glyceryl makes glycerin.)

4. That high temperatures would decompose the fats; the temperatures varying with different fats, from about 510° F., the melting-point of bismuth, to 610° F., the melting-point of lead, the very temperatures named and required by Tilghman; and that this process of decomposition is of no value only because the heat, while decomposing the fats generally, destroys all valuable products.

5. That by putting the fat into water and mixing both with

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lime—which is an oxide—or with other oxides, such as soda, potash, &c., the fat-acids could be obtained ; and that by boiling the solution under pressure, (though at lower temperatures than from 510° F. to 610° F.,) the proportion of lime could be reduced ; this tending to show that a portion of the fatty-acids were oxidized by the oxygen of the water.

6. That water can be heated up to and beyond 610° F., in vessels entirely full, so that steam shall not be produced ; the vessels being provided with a piston weighted, so as to yield to the expansion of the liquid by the heat applied ; and that though in a vessel not entirely full even an intimate admixture of fat and water could not long subsist, (the fat and water having different specific gravities, and the fat tending therefore to float,) yet, that when the vessel is entirely filled with such intimate admixture, the fat and water will not separate.

And we submit that the evidence in this case proves that fats had been decomposed by steam, (see *supra*, p. 538;) the successful production of glycerin being sometimes affirmed and sometimes denied.

Now, in view of these facts known in 1854, it is a fair presumption that Mitchell's theory, so fully sustained by Professor Wayne, as to Tilghman's purpose when he got his patent, is the true one, (*supra*, pp. 489, 538;) and that Tilghman in his specification did mean to confine himself :

1st. To the range of heat stated and such as would also decompose fats ; adding water to acidify by its oxygen the fats, and to hydrate, by its hydrogen, the glyceryl.

2d. To the use of a close vessel entirely full of the mixture of fat and water so that no steam could be formed ; a matter which he knew could be effected by digesters with a safety-valve.

3d. To the use of liquid water to the exclusion of steam, so as to distinguish his process from previously known processes through steam.

4th. To the thorough admixture of the fat before putting it into the vessel, and during the manipulation.

If this is so, his patent cannot receive a construction broad enough to cover Mitchell. That it is so seems most probable.

The high pressure named in the patent is only a consequence of the high temperature required, viz, from 510° Fahr. to 610° Fahr. The range of heat and not the pressure is the condition required. The pressure, named in the patent, was unavoidable in subjecting fats in the presence of liquid water to the high temperatures named. Heat to the requisite very high degree was what Tilgh-

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man's purpose required, with water as an attendant aid. This, it is obvious, is a process different in its nature from that which Tilghman now sets up, and which Mitchell practices.

But assuming that water, heat, and pressure used as the chemical decomposing agent were what Tilghman had in his mind, it is plain that he had no idea that the required result could be produced by them at less degrees than from 510° to 610°, depending upon the quality of the fat to be treated. Why else did he prescribe apparatus of the strength which he does; apparatus to be tested at a pressure of 10,000 lbs. to the square inch; with a safety-valve loaded to a pressure of 2,000 lbs. Apparatus demanding such high pressure, he must have known, even if scientifically safe, is never—and for good reasons, seeing that they have no men of science to watch their engines—liked by manufacturers; the class whom alone could make his labors practically valuable. Yet he not only never tried any lower degrees of heat, but nowhere so much as intimated that the process is practicable with any lower. His letter to the Cincinnati firm of Emry & Son, of the 25th of June, 1856, (*supra*, p. 526,) shows that he had no idea when he applied for his patent that he could work with lower heats, and that as soon as he did discover that he could so work, he began to do so.

II. But if the patent were susceptible of a construction broad enough to include all ranges of high temperature, the complainant's case is not helped.

1. *There is no novelty in Tilghman's alleged discovery.* The change of fat into fatty acids, through the means that he speaks of, was announced to the scientific world as early as 1823, in a paper published in the *Scientific Journal* of that year, and referred to in the evidence, (*supra*, p. 500.) The testimony of Professor Vanderweyde and of Florence Verdin and of Professor Wayne, show this, (*supra*, pp. 500, 501.)

2. *The process is incapable of being practically used by any description given in the specification.*

Certainly the process has never been reduced to practice in the United States by the mode of operation or the means described in it. There is not one of the licensees of Tilghman who uses his water, heat, and pressure alone. Even his witness and licensee, Charles Taylor Jones, proves this. All use alkalies. To say nothing of the fact that all work at low heat. His licensees, the Ropeses, father and son, show the same thing.

The process was never reduced to practice in England in the business of manufacturing fatty acids and solution of glycerin.

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Wilson & Co. may have paid Tilghman for something ; but there is no evidence that they ever used water, heat, and pressure to produce fat-acids and glycerin. Tilghman himself could not tell what process they used.

The patentee, after selling his French patent to Monier, tried during months and with the outlay of great sums to make the process work at the *stearinerie* of Villette, but failed after repeated trials in everything, and the French jury declare the process a failure.

The tests made by the chemical experts, on the part of the patentee, were not made in accordance with the mode of operation described in the patent; Professor Booth and the other experts having experimented not with the coil apparatus, but with a distiller's worm. Moreover, they are all theorists; their experiments were in very nice apparatus and on a small scale, and neither their experiments nor their evidence are of value on a practical subject to be applied on a large scale.

The patent to Tilghman of May 15th, 1860, virtually condemns the patent in issue, as not practically useful.

III. *As to infringement.* On this point the learned counsel contended, that even on a very broad view of the patent—one much broader than that which they had already contended for, and believed to be the true legal view—(a view obviously held by Emmons, J.) there was no infringement; that Mitchell's apparatus was peculiar and unlike Tilghman's apparatus; that it was composed of two vessels, and that the bubbles of superheated water were carried up by the steam from one vessel into the other, and that the superheated water there falling on the fat descended through it, decomposing it on its passage, thus producing a circulation; that this circulation of Mitchell's apparatus was opposed to and annihilated the theory and scheme upon which Tilghman's patent was framed, which required, as an essential condition, that there should be no circulation. If, indeed, it were that Tilghman discovered that water alone would acidify the other elements and hydrate the glycerin, he did not claim it in his patent, and if he did, it was a fact in nature incapable of being patented.

As to the Circuit Court decrees they had no authority here. In the case before McLean and Leavitt, JJ., the testimony was less full than here.

Mr. George Harding, contra :

I. *What is the construction of the patent?* The first position of the other side is, that heat alone from 510° F. to 610° F. itself

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decomposes fat destructively; that this is alone the operative agency in Tilghman's process; that the water operates as a base; and that Tilghman specifies as his temperature degrees of heat from 510° F. to 610° F.; and that he is limited to them.

One sufficient answer to this is as follows: Specifications are addressed to those skilled in the art. Now, Renwick, an expert called by Mitchell himself, and giving testimony on this exact point, says that "the temperature relied on is one exceeding the melting-point of tin, (440° F.,) and not exceeding the melting-point of nitrate of potash, (660° F.)" (See *supra*, pp. 490 and 538.) Rand, another expert of Mitchell, fixes the temperature of Tilghman's patent at the same points. (See *supra*, 490.) Here then Mitchell proves as part of his case that practical men would be instructed by the patent to use any temperature above 440° and below 660°. This range extends from 70° below the lowest limit fixed by Mitchell to 50° above the highest.

Rand and Wayne both testify that the chemical action of water heated and under pressure is the same below 440° as above that point, and the same from 300° to 600°.

Further. Tilghman's patent says that the change of fatty matters into fat-acid and glycerin, takes place with some things, such as palm oil, at or below the melting-point of bismuth, 510°. By starting the apparatus *at a low heat*, and gradually increasing it, the temperature giving products most suitable, &c., can be easily determined. A limit to 510° as a minimum is grossly inconsistent with this passage.

The next position of the other side is that granting what we thus assert, still Tilghman had no idea that his process was practicable except at or above the ranges 510°.

Now, the language of the claim in Tilghman's patent differs from the language of claims to patents generally. Had it followed that language it would have run thus:

"Having now described the nature of my said invention, and the manner of performing the same, I hereby declare that I claim, as of my invention, the manufacturing of fat-acids and glycerin from fatty bodies by the action of water at a high temperature and pressure, *substantially in the manner described.*"

But in Tilghman's claim the words in italic are left off. Tilghman obviously had a determination to cut away from and to keep himself clear of everything which could be regarded as working through specific machinery, or in specific times, or through any specific temperature other than that which would come within the

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designation "high." And the question is, has he, in the face of this purpose thus declared in one part of the schedule to his patent, so tied himself up in another part of the same schedule as that, going in free from them all, he comes out, bound indissolubly, and as with hooks of steel, to the very things which it is plain that it was his purpose to avoid? After announcing a wish to secure one result, has he reached a directly opposite result? reached it, too, with such malignant effect as that a great discovery, which has done honor to the United States in the eyes of Europe, and which men of science—and to a great degree men of trade as well—have delighted in calling his, is brought at once disastrously to naught?

If Tilghman has not bound himself to degrees of heat between 510° F. and 610° F.; if completion of his process, in at most ten minutes, is not indispensable; if he has not required that the vessel containing the mixture of water and fatty matter should be entirely filled therewith, or that no steam was to be permitted in it; and if in other respects he has not required things impracticable, then there is no difficulty in his case. Now—

1. *As to the heat.* Tilghman having in the opening part of his specification announced that for the purpose of carrying into practice his invention, he subjects the fat bodies on which he wishes to operate simply "*to the action of water at a high temperature*" and pressure, announces two modes of working. In the first he says:

"I mix the fatty body to be operated upon with from a third to a half of its bulk of water, and the mixture may be placed in any convenient vessel in which it can be heated *to the melting point of lead*, until the operation is complete. The vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam."

He also describes a special apparatus. He says:

"The process may be performed *more rapidly* and also continuously by causing the mixture of fatty matter and water to pass through a tube or continuous channel, *heated to the temperature already mentioned*; the requisite pressure for preventing the conversion of water into steam being applied during the process; and this, I believe, is the *best mode of carrying my invention into effect.*"

This, he "believes," is "the *best mode*;" the "temperature already mentioned," that is, the melting point of lead being included, as much as and no more than the use of the tubes.

On this subject of heat he continues:

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"Although the decomposition of the neutral fats by water takes place with *great quickness at the proper heat*, yet I prefer that the pumps should be worked at such a rate in proportion to the length or capacity of the heating tubes, that the mixture, while flowing through them, should be maintained at the desired temperature for *ten minutes* before it passes into the refrigerator or cooling parts of the apparatus."

He says further :

"The melting point of lead has been mentioned as the proper heat to be used in this operation, because it has been found to give good results. But the change of fatty matters into fat-acids and glycerin takes place with some materials (such as palm oil) at or below the melting point of bismuth, yet the heat has been carried considerably above the melting point of lead without any apparent injury, and the decomposing action of the water becomes more powerful as the heat is increased. *By starting the apparatus at a low heat, and gradually increasing it, the temperature giving products most suitable to the intended application of the fatty body employed can easily be determined.*'"

He goes on again :

"To indicate the temperature of the tubes, I have found the successive melting of metals and other substances of different and known degrees of fusibility to be convenient in practice. . . . The series I have used consists of tin, melting at about 440° F.; bismuth, at about 510 F.; lead, at about 612 F.; and nitrate of potash, at about 660° F."

And now, before all this description, how had he begun? Thus:

"My invention consists of a process for producing free fat-acids and solution of glycerin from those fatty and oily bodies of animal and vegetable origin which contain glycerin as their base. For this purpose, I subject these fatty or oily bodies to the action of water *at a high temperature* and pressure."

And how, after all this, does he end? Thus:

"Having now described the nature of my said invention, and the manner of performing the same, I hereby declare that I claim as of my invention, the manufacturing of fat-acids and glycerin from fatty bodies by the action of water *at a high temperature* and pressure."

In the face of such a beginning, and such an ending, how can it be said that the patentee had no conception of anybody's doing

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anything by his process but when working with or between the exact two degrees of 510° F. and 610° F.?

The point that Mitchell makes, as to both the vessels, is that *he* uses a lower temperature than that stated by Tilghman to be his preference. But does not the general include the particular? And after the general announcement that water at a high temperature and pressure will decompose fats, how can any one argue that it still remained unknown that it would do so at *any particular* high temperature and pressure? It would follow, if the argument of the other side were good, that the day after Tilghman got his patent, another person could have obtained a valid patent for using the same process at all temperatures not specifically mentioned by Tilghman. Tilghman's discovery was that water at a high temperature and pressure had a certain chemical power; that it was for a purpose mentioned a new chemical agent. If his discovery had been that nitric acid would produce fat-acids, and he had said, I prefer to use strong nitric acid of 20° B., but weaker acid will act less powerfully, and I claim the use of nitric acid generally, could a man have used nitric acid of 1° B. and have said that it was a different invention? The chemical action of water upon fat is the same at 300° as at 612° F. This is proved in the case. (See *supra*, p. 490.)

2. *As to rapidity of manipulation; ten minutes.* That plainly is but a consequence of the rate at which you work the pump. If you pump fast you will get the product with "great quickness," if you have used "the proper heat." "Yet, I prefer," says Tilghman, "that the pump be worked at such a rate . . . that the mixture should be maintained at the desired temperature for ten minutes." But may not any one else who has used "the proper heat" drive the pump faster, and get *his* product the moment it is made, or drive it more slowly and not get it till after more than ten minutes, say not till fifteen?

3. *As to the fullness of the heating vessel.* In the court below the assumption was made by the other side that the specification required the heating vessel to be full, and the argument then was that as it would of necessity burst, the patent was void. (*Supra*, p. 539, note.) The argument of the same side here, now assumes that it must be full, and that it will not burst, for certain very good reasons stated. The answer is the same to both these internecine arguments; to wit, that neither in the first nor in the second modes set forth by Tilghman, was the vessel required by the specification to be full; though in the second one the *tubes*—which in the particular coil apparatus, described by Tilghman, happen to

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be also the vessel in which the mixture is heated—are so required to be, in order that steam may be kept out from them. The witness, C. T. Jones, a practical manufacturer, explains what, both here and in the court below, has confused the counsel. (*Supra*, pp. 506, 507.) That witness states that there are reasons obvious to any one accustomed to boilers, why, in the first process of Tilghman, the heating vessel should *not* be filled, (the reason being obviously that it would burst,) and that obvious reasons occur to him why, in the second, the tubes *should* be kept full; which is to keep steam out of them and prevent irregular working of the machinery. If *steam* were permitted to accumulate and displace the highly heated liquid water away from the fat in the tube, the decomposition would not take place regularly.

So in regard to other matters. Alkalies had long been used in this operation. Tilghman did not deem it necessary to say that if the operator thought well to throw in a dash of lime he might do so. It has been frequently decided that known things need not be described when they are used in carrying out a newly patented invention. English and American cases alike lay down this rule. *Househill & Co. v. Nelson*, Webster's Patent Cases, 687; *Emerson v. Hogg*, 2 Blatchford.

So again it was obvious that lower heat and longer time would give the result of higher heat and less time.

II. The originality of Tilghman's invention we leave on the evidence. Professor Vanderweyde and Mr. Verdin are the only persons called to disprove the originality; but they give no testimony at all in the case. They testify only to certain singular facts about themselves. Neither had ever seen a book of science in which it was stated that Tilghman had discovered anything about the decomposition of fats at all. (*Supra*, pp. 500, 501.)

4. Concede that the experiments of Dr. Vanderweyde and Dr. Doremus were not successful. What kind of experiments were they? Experiments made with Verlin, at the factory of the defendant, in a vessel probably soiled with dirt, and where the chief experimenter, Verdin, had a vast pecuniary interest not to make the experiment succeed, but to make it fail. And they managed everything so well that, to a considerable degree, it did fail. Yet they confess that they always got some fat-acids and some glycerin. (*Supra*, p. 516.)

5. We offered repeatedly to show in operation to Mitchell the very apparatus from which our experts got our fat-acids and glycerin, and he declined to see it. What if he did offer to show to us an apparatus so made by him as not to succeed, and offer to alter

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it, as we should tell him. If we showed to him an apparatus made according to the specification, that had done and would do the work, that was enough. We were not bound to be delayed by his alterations of an apparatus perhaps radically defective.

III. *Practicalness.* 1. Four experts—men of the highest reputation in chemical science throughout the country—say that they made experiments in accordance with the specification, and that the process is perfectly practicable. (*Supra*, pp. 503, 504.) The manufacturers, as Jones, and Ropes, and Grant, all say substantially the same thing. (*Supra*, pp. 508, 522, 525.) It is said that they use low heat and a dash of alkali. It is said that while they all say they are using the “Tilghman process” they are not using it; for that they use different degrees of heat, and a dash of alkali, and quite different apparatus from the coil. But this argument acts in two ways. What does it prove, but that these manufacturers, these practical men, these men who have to pay for using this process, all regard the lower degrees of high heat and the use of a dash of alkali, and an apparatus unlike the coil, as within Tilghman’s patent. Like the four great experts, they distinguish accident from essence, incident from substance, an illustration from the principle receiving it. We have here, then, a construction of the patent from a very high source. Besides, they all declare that with higher heat, and water pressure merely, they can produce the results very well; and some of them, that they have done so.

2. But the payment of £1,000 for year after year by Price & Co.’s great British candle company stands in the place of all other argument. It is *réponse sans réplique*. No manufacturers on earth were so competent to say whether what the scope of the invention was and whether it had practical value, none so much interested to say that it had none, yet Mr. G. F. Wilson, their managing agent, the most competent of witnesses, publicly declared that “all must admit it a beautiful, *original* chemical idea, *well carried out.*” (*Supra*, p. 499.) Tilghman, of course, was never inducted into the *arcana* of their factories. Such places in Great Britain are closed to the public; and Mr. Mitchell has himself told us why Tilghman saw no more than he did.

3. Monier’s testimony is reduced to naught in the face of his compromise with Tilghman, by which he paid him one thousand francs, and still more of his letter to Fontaine Moreau, in which it is asserted that De Milly was using and greatly profiting by Tilghman’s process. Indeed, in his testimony, Monier says that the “Messrs.” Tilghman “paid no attention to the process patented,” and “made—not serious experiments—but trials to find

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the means that arrested them." (*Supra*, pp. 529, 530.) Arrested them in what? In their endeavors to carry out some ridiculous ideas of improvement in their process which were Monier's own; and for his vexation about which, to the Tilghmans, he finally had to pay and did pay them one thousand francs.

4. With the annihilation of Monier's account of things, the report of the French jury falls lifeless to the ground.

5. It is urged that Tilghman's letter of June 25th, 1856, to the Cincinnati house of Emry & Son, showed that he did not originally know that he could work at low heats, and that as soon as he learned the fact he changed his mode of working. It shows no such thing. The case is this: Tilghman, being a scientific and careful man, knowing exactly what steam machinery was safe and how to regulate it, preferred to work rapidly, cheaply, and to use a pressure of 2,000 lbs. to the square inch; a pressure which Nason, a practical steam-engineer, testifies is perfectly safe in tubular apparatus. (*Supra*, p. 531.) But in cities, where explosions of common boilers sometimes occur in manufactories with awful loss of life, a horror prevails of the very idea of high pressure. It is a prejudice. Finding it too strong to be resisted, Tilghman conformed to it, and in 1856, introduced low pressures, and let his licensees take more time, and pay more money.

6. The purpose of Tilghman's patent of 1860, relied on to defeat the patent of 1854, was quite different from that patent, as appears by examination of it.

The patent of 1860 was for an improvement in that of 1854; and had no other design than to enable the operator to secure the glycerin produced in the operation, with the least quantity of water, or in other words in a higher state of concentration.

Glycerin is soluble in water, and, of course, the less water that can be used the better. When the water and fat are put in a single vessel there is only a single surface of contact. By the use of a series of trays, such as the patent of 1860 provided for, and the establishment of opposite currents of fat and water, the contact of the water and fat is greatly extended, and hence less water suffices. This improvement is applicable alike to high and to low pressures. Inasmuch, however, as in the interval between 1854, the date of his first patent, and 1860, the date of the second one, Tilghman's process had gone into general use at lower temperatures, and with the use occasionally of small percentages of alkali, he describes his improvement of 1860 so as to make it applicable to his prior invention as subsequently used.

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IV. *As for infringement.* The chief witness of the other side is Professor Rand. He says:

"There is a great difference in the *mechanical surroundings* and conditions forming part of the processes of the complainant and defendant respectively."

He assumes that the "mechanical surroundings" of Tilghman's special apparatus are of the essence of Tilghman's patent, though Tilghman expressly disclaimed, as part of his invention, that special apparatus. Five experts, who look beyond "mechanical surroundings" into scientific and deep-laid truths, contradict him. The question is one of construction of the patent, and if it is not construed in the very narrow way in which the witness construes it, the infringement will hardly be denied.

Tilghman was the inventor of a process; that is to say, a result produced by chemical action; a thing for which it is lawful to take out a patent as much as for a new machine. Now, the law on that subject was thus declared in *Househill Company v. Neilson*, Webster's Patent Cases, 683, in a way acknowledged in this court as right; *Corning v. Borden*, 15 Howard, 266; *O'Reilly v. Morse*, Ib. 62, where Morse's case was distinguished from *Househill Company v. Neilson*.

"*You may obtain a patent for a mode of carrying a principle into effect; and if you suggest and discover not only the principle, but suggest and invent how it may be applied to a practical result by mechanical contrivance and apparatus, and show that you are aware that no particular sort or modification of form of apparatus is essential in order to obtain benefit from the principle, then you may take your patent for the mode of carrying it into effect, and are not under the necessity of describing and confining yourself to one form of apparatus.*"

What is said here of apparatus will apply, of course, and with greater force, to temperature.

Now, Tilghman having made the discovery that water when heated and retained in a liquid state by pressure in a close vessel to prevent its escaping as steam, possessed certain chemical powers with reference to fat, did not stop there.

He went on to find out how this principle might be made practically useful. The first thing was to discover by experiment how much water was necessary, and he announces in his patent that from one third to one half of the bulk of the fat will produce the result.

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The next thing was to discover the degree of heat, and length of time, and he naturally sought to do it in the shortest time, and he found by experiment, and announces in his patent, that the higher the temperature the more powerful is the action, and that at the temperature of about 612° Fahr., the action will take place in ten minutes.

In Whitney's patent for a process for making chilled peripheries or treads of iron car-wheels, the language of Whitney in describing his process was that "the temperature of the furnace or chamber and its contents are gradually raised to a point *a little below* that at which *fusion commences*;" when, he added, "that by this process all parts of each wheel are raised to an equal temperature." This was the *only instruction* as to temperature given in that patent. On a suit by Whitney against Mowry, the defendant relied on two points in opposition to that claim in the specification. *Mowry v. Whitney*, 14 Wallace, 630, 636.

1. "That Whitney's patent was void, because it designated and provided for such a degree of reheating and none other ('*a little below that at which fusion commences*') as would destroy the chilled periphery or tread, an essential feature to a car-wheel."

2. "That Mowry's process did not infringe on Whitney's patent, because it was incredible (that in the Mowry process) any such degree of reheating is or could result as was contemplated in Whitney's patent."

But this court rejected this narrow view, and said: (*Mowry v. Whitney*, 14 Wallace, 645, 646.)

"It would be most unreasonable to read the directions of the specification without reference to the object which they profess to have in view. . . . We do not think it a fair construction of the patentee's language to hold that it requires the heat to be raised in all cases to a degree only a little below the point of fusion. He does not attempt to give any more definite direction than that all parts of the wheel must be raised to the same temperature, suggesting in a parenthesis ('say, a little below that at which fusion commences.') He fixes a maximum."

This was the view taken in accordance with settled law by McLean and Leavitt, JJ., when the case was before them. (*Supra*, p. 541.)

This case has been before no less than five judges, and on three different occasions all have given judgment in favor of Tilghman. Two of these judges, McLean and Nelson, were reverend judges of this court; and both eminent in their knowledge of the law of pat-

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ents. The labors and the judgments of the dead are as sterling as those of the living. The speculative questionings of Emmons, J., are worth nothing in view of the fact that he decided the case in full face of and against them. The case here is on the identical evidence on which it was before Nelson and Blatchford, JJ., who on that evidence adjudged the patent good and the defendant an infringer, and the construction of the specification of the patent in which Nelson, Blatchford, McLean, and Leavitt, JJ., were clear and unanimous, and on which Emmons, J., followed them is a matter which is independent of evidence altogether. The opinions and judgments of so many and so learned judges deserve a very high respect.

Mr. Justice CLIFFORD delivered the opinion of the court.

Exclusive jurisdiction, in all actions at law and suits in equity arising under any act of Congress granting or confirming to inventors the right to their inventions or discoveries, is conferred upon the Circuit Court, subject to the condition that the final judgment or decree in such a controversy may be removed here for re-examination.

On the third of October, 1854, letters patent were granted to the complainant for a new and useful improvement in processes for purifying fatty and oily substances of animal and vegetable origin and which contain glycerin (glyceryl) as their base. His invention, as the patentee states, consists of a new and improved mode of treating such substances in order to produce fat-acids and solution of glycerin, which, as he says, was not known or used before his application, and the recital of the patent is that it shall take effect from the ninth day of January preceding the date of the instrument. By virtue of the said letters patent, as the complainant alleges in his bill of complaint, he acquired the exclusive right to make and use the described improvement, and to vend the same to others to be used; and he also alleges that the respondent, prior to the time when the bill of complaint was filed, without his license and in violation of his rights, engaged in making and using his patented process, and that he, the respondent, intends to continue to make and use the same, as set forth in the bill of complaint. Service was made, and the respondent appeared and filed an answer setting up several defenses, as follows:

1. That the complainant, on the 9th of January, 1854, was not the original and first inventor of the improvement described in the said letters patent.
2. That the result described in the specification and claims of

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the patent cannot be accomplished, so as to be practically useful, by the method and apparatus described in the specification.

3. That the respondent never practiced or used the patented process of the complainant as charged in the bill of complaint, or in any other manner. He admits that he is engaged in manufacturing candles, and that in manufacturing such articles he uses water and steam at high temperature, and that he also uses such pressure as arises from the expansive force of hot water or steam in a close vessel, but he denies that he uses any such method, process, or apparatus as those described in the letters patent of the complainant.

4. That the patented processes described in the specification were well known to chemists and men of science and to manufacturers long before the alleged invention of the complainant, and were also used and practiced by them and were described in printed publications before the complainant filed his application for a patent.

5. That the use of a close vessel of sufficient strength to resist the pressure of water when heated, or any pressure needed when using water to decompose other substances, was known to, and practiced by, men of science and manufacturers in this country and elsewhere long before the alleged invention; that highly heated water when used as described is an elementary principle open and free to all, and that such a principle is not one that is subject to a patent; that a prior knowledge of the alleged invention was possessed by many other persons, and that the same was described in many printed publications, as fully set forth in the answer.

Issues of the kind cannot be intelligently determined without a clear understanding of the nature and scope of the invention secured by the letters patent, as it is the patented invention which it is alleged the respondent has infringed, and in order to such an understanding it becomes necessary, as a preliminary step in the investigation, to construe and define the claims of the patent, as the most efficient means of ascertaining the precise nature and extent of the inquiry involved in the respective issues presented in the pleadings.

What the patentee claims as his invention is the process of manufacturing fat-acids and glycerin from fatty or oily substances by the action of water at a high temperature and pressure, which, beyond doubt, is the true object of the invention described in the specification, as plainly appears from the description of the means employed by the patentee to decompose the described substances and to produce the described result. His invention, as the patentee states, consists of a process to produce fat-acids and glycerin

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from the described fatty and oily substances by subjecting the substances to the action of water at a temperature and pressure, so high as to decompose those substances and cause the elements of the same to combine with water, and by such means to produce fat-acids and solution of glycerin, which is the described result. Specific description is also given as to the relative quantity of water to be used, and of the character of the vessel to be employed, as means to create the high temperature and pressure and to decompose the original substances, and cause the elements of the same to combine with the water to produce the result described in the patent. Such substances, the specification states, must be mixed with a quantity of water, equal in bulk to one-third or one-half of the fatty or oily substance to be subjected to the patented process, and that the mixture of the substance and the water must be placed in some convenient vessel in which it can be heated to the melting-point of lead and be kept at that temperature until the operation is complete. Undoubtedly the mixture may be placed in any convenient vessel of sufficient strength to resist the internal pressure when the solution is heated to the point described in the specification, but it is equally clear that any vessel not strong enough to resist such a pressure would not be a convenient one for such a purpose, nor is any one of less strength within the contemplation of the patentee, as he states with emphasis that the vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam, and he might have added, to prevent the vessel from bursting. High temperature, in the view of the patentee, is indispensable, and inasmuch as the vessel must be closed it follows that the vessel must be one of great strength, as the high temperature will necessarily produce very great internal pressure. Hence the requirement is that the vessel must be one of great strength, and the patentee suggests, as the best mode of carrying his invention into effect, that the mixture, prepared as described, be passed through a tube or continuous channel, heated to the before-mentioned temperature, that is, to the melting-point of lead.

Figures of the several parts of the described apparatus for performing the operation are given in the drawings, and the inventor proceeds to state, that in applying his process and carrying it into effect he places the fat or oil to be subjected to the process in the receiving vessel shown in the drawings, with from one-third to one-half its bulk of warm water, and to effect the described result he employs a piston with a perforated disk, arranged to work up and down, in the receiving vessel, which being kept in rapid motion

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will cause the fat or oil and the water to form an emulsion or intimate mechanical mixture, which is the mixture to be subjected to the high temperature and pressure. But the heat is to be applied in another vessel, as shown in the drawings, and for the purpose of removing the mixture to such other vessel the inventor employs a force-pump, like those in use for hydraulic presses, by means of which he drives the mixture into and through a long coil of very strong iron tube, which being placed in a furnace is continued there until the mixture is heated to the temperature of melting lead. Attached to the opposite end of the coil is a refrigerator or cooling apparatus, but the inventor states that he prefers that the high temperature of the mixture should be maintained for ten minutes before the product passes through that part of the coil immersed in water, by which it is cooled down from its high temperature to 210° Fahr., after which it escapes through the exit valve to the vessel prepared to receive the product of the patented process. High heat applied in the manner and by the means described is unquestionably the agent employed by the patentee to decompose the fatty and oily substances to be subjected to the patented process, and it is equally certain that he contemplates that the temperature shall be so high that the fatty and oily substances, as mixed with the water, in the manner before explained, will be decomposed and converted into fat-acids and solution of glycerin in a brief space of time, not exceeding ten minutes, as he gives no intimation that it will ever be necessary to continue the mixture in the heated coil beyond that length of time.

Rapid manipulation and high heat are therefore the leading characteristics of the described process, as the great pressure mentioned is only the consequence of the high heat, but as the high heat is indispensable to produce the described result, and as the vessel containing the mixture to be heated must be closed, it is quite obvious that the vessel must be one of very great strength, else it would prove to be a very inconvenient one, as it would be likely to burst. Support to that conclusion is found in the description which the inventor gives of the character of the tubes which he employs as the vessel for heating the mixture. He employs coils of tube for the purpose, arranged in such a manner that a considerable length of the same will occupy but a moderate space, the coils being kept about a quarter of an inch apart from each other. Tubes of the kind are made of iron, and the inventor states that they are one inch in the external diameter with a half-inch bore, incased with solid cast iron, which also covers the outer coils or rows of tubes to the thickness of half or three-quarters of

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an inch, to insure uniformity of temperature in the different parts of the coil and to give strength to the apparatus and to protect it from injury by fire. Much additional confirmation to the conclusion that the process of the patentee contemplates high heat and rapid manipulation is also found in the other parts of the specification. Evidently the inventor is of the opinion that the operator must be exposed to imminent danger unless the vessel is one of very great strength, as he states that he deems it prudent to test the strength of the apparatus by a pressure of ten thousand pounds to the square inch before taking it into use. Such a test he deems prudent before using the vessel, but he expresses the opinion that the working pressure necessary in using the degree of heat required will not be found to exceed two thousand pounds to the square inch, which admission of itself is sufficient to maintain the conclusion that high heat is the agent which the inventor in his process employs to decompose the substances subjected to the patented process. Certain substances, such as palm oil, the inventor represents, may be decomposed and converted into fat-acids and glycerin under his process when the temperature is at or below the melting-point of bismuth, but he states that the heat in decomposing such a substance may be raised considerably above the melting-point of lead without any apparent injury, and he adds that the decomposing action of the water becomes more powerful as the heat is increased.

Considered as a whole these several considerations show to a demonstration, in the judgment of the court, that the invention described in the specification and embodied and claimed in the patent is the use of great heat in the manner described to decompose the described substances when properly prepared, by being pulverized or broken into small particles and mixed with water, and cause the elements of the decomposed substances to unite with the particles of the heated water by which the mixture is converted into fat-acids and solution of glycerin. Manifestly great heat, applied in the method described, is the principal agent, but water is an essential ingredient, as without it the product of decomposition would be destroyed in the operation.

Evidence that the inventor contemplates that the change in the substance shall be accomplished in a brief space of time abounds in the specification. Ten minutes is the maximum time suggested that the high temperature should be maintained while the mixture is flowing through the heated tubes before it passes into the refrigerator, but the patentee also states that it is important for the quickness and perfection of the decomposition that the oil and

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water should continue, during the passage of the emulsion through the heating tubes, in the same state of intimate mixture as they were when the mixture was driven into the heated coil, and to that end the inventor states that he prefers to place the series of heating tubes in a vertical position, so that if any partial separation takes place while the liquid passes up one tube, the change may be corrected as the liquid passes down the next.

Suitable means are pointed out to indicate to the operator the state of the heat in the tubes, and for that purpose the inventor suggests the making of certain indicators or gauges showing the melting point of certain metals and other substances, of different and known degrees of fusibility, and he gives the series which he has used, which consists of tin, melting at 440° Fahr.; bismuth, 510° Fahr.; lead, 610° or 612° Fahr.; nitrate of potash, 660° Fahr.; and he describes the mode in which such gauges may be constructed. Palm oil will be decomposed by heat at 510° Fahr., and the inventor mentions that as the lowest gauge for the treatment of any known fatty or oily substance to be subjected to the patented process under consideration.

Ordinary fats, such as beef tallow, or the tallow of sheep, require the heat to be raised to 612° Fahr., which is the melting point of lead. Mention is made in the series set forth in the specification of the melting point of tin, which is 440° Fahr., but the mention of that chemical fact was doubtless made as a guide to the operator in carrying up the heat to the point necessary to decompose the respective substances, such as palm oil or the ordinary tallows, all of which require the heat to be raised to a point higher than the melting point of tin.

No different conclusion can be reached, as there is nothing in the record which gives any countenance to the theory that the melting point of tin, 440° Fahr., was given as a gauge of heat which, under the process of the patentee, would decompose any known fatty or oily substance in such a manner as would enable the operator to manufacture the product described in the patent.

Substances are mentioned in the specification which, under the described process, would require the heat to be raised to the melting point of bismuth and to the melting point of lead, but the specification does not make mention of any substance of the kind which can be decomposed as required at the melting point of tin, nor does it mention any one which for the same purpose would require the heat to be raised to the melting point of the nitrate of potash. Probably the former was mentioned for the guidance of the operator, as before explained, and it may be that the latter

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was given for a corresponding purpose as the maximum limit for the operator in raising the heat to decompose such fatty and oily substances as the ordinary beef tallow or the tallow of sheep, which require the heat to be raised to the melting point of lead in order to produce a good result under the patented process.

Two other requirements of the specification support the theory that high heat is the principal agent of the patented process, and that the vessel to be used for heating the mixture must be kept closed during the process of decomposition, and be one of sufficient strength to sustain, without bursting, an internal pressure of at least two thousand pounds to the square inch. One is that the exit valve is required to be so loaded that when the heating tubes are at the desired working temperature the valve will not be opened by the internal pressure produced by the application of the heat to the mixture, so that when the pump is not in motion none of the mixture will escape at the other end of the apparatus; and the other requirement is that "no steam or air shall be allowed to accumulate in the tubes, and that the tubes shall be kept entirely full of the mixture."

Argument to show that the vessel used for heating the mixture must be kept closed is unnecessary, as the terms of the specification expressly require it, and the patentee to that end directs that if practicable the ends of the tubes should be welded, and if not, that they be connected by certain described joints to accomplish the same purpose, evidently regarding a compliance with the requirement that "the vessel must be closed" as an indispensable condition.

Half or one-third of the mixture to be subjected to the patented process is water, and the condition set forth in the specification is imperative that the vessel used for heating the mixture must be closed, that the requisite amount of pressure may be applied to prevent the water from being converted into steam; and it is also an express condition that no steam or air should be allowed to accumulate in the tubes, for reasons which will be obvious to any who will carefully examine the described method of producing the described result.

Means of a mechanical character are prescribed in the specification for intermingling the fat and the water into what is called an emulsion, which is the mixture to be subjected to the patented process, but the difference between such an intermingling of one substance with another, which may be accomplished by a stirrer or by the churning process, and the actual union produced by chemical affinity between two or more substances, is as wide as one

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thing well can be from another. Such an intermingling of fat with water does not work any chemical change in either substance, as it creates at best but a temporary affinity. Consequently the water, if the mixture is left for a sufficient length of time undisturbed by the stirrer or piston, will separate from the particles of fat and settle at the bottom. Widely different results flow from chemical affinity, as such an affinity will produce a new and distinct substance, uniting, it may be, the constituents or properties in whole or in part of substances as different as fat and water.

Fats consist of several constituents closely united in indefinite proportions, of which olein, margarin, and stearin are the only ones usually recognized and defined by chemists; the former constituting the oily and the two latter the solid principle of the united substance. 1 Regnault's Chemistry, § 1592.

These constituents or elements are held together by chemical affinity, the consistency of the united substance depending upon the respective proportions of the constituent parts. High heat will overcome the affinity, by which the constituents are united and decompose the substance. Different kinds of fat, however, require different degrees of heat to effect the decomposition of the united substance, varying in intensity from 510° Fahr., the melting point of bismuth, to 610° or 612° Fahr., the melting point of lead, which are the very temperatures mentioned as required in the specification of the complainant's patent. But it should be remarked in this connection that the decomposition of such a substance by heat alone will not produce fat-acids or solution of glycerin. Turner's Chemistry, by Johnson, 8th edition, p. 456.

Free fat-acids and solution of glycerin are what the patentee promises as the result of a proper application of the patented process. Those acids, it is conceded, are oleate, margarate, and stearate, which, it is claimed, the process will produce, together with the solution of glycerin, but it is clear that heat alone will not produce either of those fat-acids or the solution of glycerin, as the three acids and the glycerin are chemically combined in the original substance with the oxide of glycercyl as an acidifying base. Temperatures such as described will decompose the fat, but unless some chemical agent, such as water, lime, soda or potash, is present to take the place of the oxide of glycercyl to acidify the olein, the margarin, and the stearin, or to oxidize the said several constituents and to convert the same into oxide of olein, margarin, and stearin, neither of the fat-acids required, to wit, oleate, margarate, or stearate, can be obtained from the decomposition of fats by heat, as the oxide of glycercyl, which was their base in

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the original substance, is separated by the act of decomposition; nor is it possible, unless water or its equivalent be present when decomposition takes place, to obtain solution of glycerin, for reasons equally conclusive though somewhat dissimilar in the chemical sense, as the presence of water or its equivalent is required in the latter case to hydrate the glycetyl and convert the same into the solution of glycerin. Without the presence of water or its equivalent constituents neither the fat-acids mentioned nor solution of glycerin will be obtained by heat, but with it the three fat-acids mentioned and solution of glycerin will be produced if the operator complies with all the other conditions described in the specification. Silliman's Chemistry, 25th edition, p. 441.

Viewed in the light of these suggestions, as the question should be, it is quite clear that the two conditions last named, to wit, that the heating vessel must be kept entirely full of the mixture and that no steam or air must be allowed to accumulate in the vessel employed to impart the heat, are material and indispensable conditions of the patented method of producing fat-acids and solution of glycerin from the described substances, as without a compliance with those requirements there might not, and probably would not, be present when decomposition takes place any equivalent of a base to take the place of the oxide of glycetyl and to unite with the olein, margarin, and stearin to convert the same into the three fat-acids known as oleate, margarate, and stearate. These three constituents in the fat, to wit, olein, margarin, and stearin, are combined with the oxide of glycetyl as a base, and when decomposition is effected under the influence of heat, some chemical agent, such as water or its equivalent, must be present, which can take the place of the oxide of glycetyl to change the three constituents of fat just named into the oxides of olein, of margarin, and of stearin. 3 Miller's Chemistry, 370, § 1141; 2 Ure's Chemical Dictionary, 5th edition, 379.

Some chemical agent must also be present to take the place of the constituent which was combined with the glycetyl to produce the solution of glycerin, as represented in the specification; and it does not appear to be controverted that in all methods heretofore practiced water or its equivalent has always been present for such purpose, and it is manifest that the requirement that water or its equivalent shall be present to accomplish that purpose, in the specification, is an indispensable condition, as the new substance would otherwise be destroyed by the operation, which requirement cannot be fulfilled unless the vessel is kept entirely full of the mixture, as otherwise steam and air will accumulate and fill the vacuum.

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Water must be present in the mixture to furnish the requisite constituent to unite with the olein, margarin, and stearin, and to oxidize the same, else it will be impossible to obtain the described fat-acids; and the presence of water in the mixture when the decomposition takes place is also equally indispensable to furnish the requisite constituent to take the place of the oxide evolved by the operation from the glycercyl and to unite with the other constituents of the same to produce solution of glycerin, which the specification alleges is one of the results to be obtained from the decomposition in the method therein described. Unless water or its equivalent be present to furnish such constituent to take the place of the oxide evolved from the glycercyl, the same heat that separates the glycercyl from the other constituents of the fat in the mixture will convert the same into acrolein, which is an offensive substance destitute of any useful quality, or, in other words, the glycercyl will be converted into a substance which is neither new nor useful, and of course the process to obtain it would not be the proper subject of a patent. 2 Watts's Chemical Dictionary, 894; Atfield's Chemistry, 394; Silliman's Chemistry, 25th edition, p. 44, § 763.

Nothing provided in the patent or suggested by the patentee will secure the presence of water when decomposition takes place, unless the vessel be closed and be kept entirely full of the mixture, as otherwise the water will be converted into steam, and steam and air will accumulate in the heating vessel. No means are described or suggested to add water to the mixture after the mixture is forced into the heating vessel, and it is plain that nothing of the kind can be successfully accomplished without some material change in the apparatus.

Beyond all doubt the conditions mentioned appertain to the described method patented by the complainant for producing fat-acids and solution of glycerin from fatty and oily substances of animal and vegetable origin, which contain glycercyl as their base, but it is equally clear that the patentee does not claim the described apparatus as any part of his invention, and that he is not the original and first inventor or discoverer of the scientific truth that such fats as beef tallow and palm oil may be decomposed by heat or by heat and water combined, nor of the scientific truth that fat-acids of commercial value may be obtained from such substances as tallow and palm oil by means of heat or by heat and water.

Power to issue letters patent is conferred upon the Commissioner of Patents, and inasmuch as such grants are executed by public authority and in pursuance of an act of Congress, the rule is that

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the patent, when introduced in evidence by the complaining party in a suit for infringement, affords a *prima facie* presumption that the patentee is the original and first inventor of what is therein described and claimed as his invention. Application for a patent is required to be made to the Commissioner appointed under authority of law, and inasmuch as that officer is empowered to decide upon the merits of the application, his decision in granting the patent is presumed to be correct. *Agawam Co. v. Jordan*, 7 Wallace, 597.

Sufficient has already been remarked to show what the alleged invention is as construed and defined by the court. Having ascertained that matter, the next inquiry is, whether the complainant is the original and first inventor of the improvement?

1. Persons seeking redress for the unlawful use of patented inventions must allege and prove that they are the original and first inventors of the same, and that the party defendant is guilty of the alleged infringement. In the first place, the burden to establish both of those allegations is upon the party instituting the suit, but the rule, as before explained, is that where the complainant or plaintiff introduces the patent in evidence, if it is in due form, it affords a *prima facie* presumption of its correctness, which, in the absence of opposing proof, will entitle the complaining party to relief. Availing himself of that rule the complainant introduced his patent in evidence, which is sufficient to show that he is the original and first inventor of his improvement, as construed and defined by the court, unless sufficient evidence to overcome that presumption and to establish the contrary allegation of the answer is exhibited in the record. *Seymour v. Osborn*, 11 Wallace, 538.

Whether tested by the language of the claim or by that of the patent, or by the language embodied in the two introductory sentences of the specification, it is equally clear that the patentee, at the time the patent was granted, did not pretend that he was the original and first inventor or discoverer of the scientific truth that high heat or water heated to a high temperature would decompose such fatty and oily substances as those mentioned in the specification of his patent, and the evidence in the record shows that such a pretense, if it had been made, could not have been supported for a moment.

Opposed to that proposition it is suggested that the patentee claims "the manufacturing of fat-acids and glycerin from fatty substances by the action of water at a high temperature and pressure," which must be admitted subject to the universal qualifica-

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tion that the legal construction of every such claim is that the patentee means to limit the same to his described method or process; or, if it be a machine, to his described means of obtaining or of accomplishing the described result. Usually the claim contains the words as described, or substantially as described, or words of like import, which are everywhere understood as referring back to the descriptive parts of the specification. Words of such import, if not expressed in the claim, must be implied, else the patent in many cases would be invalid as covering a mere function, principle, or result, which is obviously forbidden by the patent law, as it would close the door to all subsequent improvements. *Seymour v. Osborn*, 11 Wallace, 547; *Curtis on Patents*, § 242.

Doubtless, an invention may be good though the subject of it consists in the discovery of some principle of science or property of matter, never before known or used, by which some new and useful result is obtained, and such an invention or discovery may be the subject of a valid patent without including in the claim any new arrangement of machinery to accomplish the object, provided the inventor describes, as required in the patent law, the method, process, or means of applying the invention to practical use and of obtaining the described new and useful result. *Househill Co. v. Neilson*, 1 Webster's Patent Cases, 683; *Curtis on Patents*, 4th edition, 279; *Foote v. Silsby*, 2 Blatchford, 260.

Limited, as explained by reference back to the descriptive parts of the specification, the claim may well be regarded as in due form, but it is quite clear that it would be invalid if it is not so limited, as it has always been held that a patent embraces nothing more than the improvement described and claimed as new, and that any one who afterwards discovers a method of accomplishing the same object, substantially and essentially differing from the one described, has a right to use it and to vend it to others to be used. *O'Reilly v. Morse*, 15 Howard, 119; *Curtis on Patents*, 4th edition, § 163.

Apply that rule and it is clear that the invention must be limited to the described method of producing free fat-acids and solution of glycerin from the fatty and oily substances therein mentioned, as the patent states that the patentee alleges that he has invented a new and useful improvement in processes for purifying such fatty and oily substances, and the opening sentence of the specification describes the invention as a new and improved mode of treating fatty and oily substances, and the patentee, in describing his invention, states that it consists of a process for producing free fat-acids and solution of glycerin from such fatty and oily substances

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as are therein particularly described, and there is not a word either in the specification or claim of the patent to warrant the conclusion that the patentee or the Commissioner of Patents, at the time the patent was granted, regarded the patentee as the original and first inventor or discoverer of the scientific truth that such fatty and oily substances may be decomposed by high heat or water heated to a high temperature.

Unquestionably the method or process embodied in the patent includes high heat and rapid manipulation, but the patentee is not the original and first inventor of the scientific truth that heat or water at high temperature will decompose such fatty and oily substances as those mentioned in the specification. Different gauges of heat to be employed in applying his process are certainly given in the specification, as before explained, but it is a great mistake to suppose that the gauge for decomposing such fats as beef tallow or the tallow of sheep admits of any variation except what is authorized by the word "about," or that the gauge given for decomposing palm oil may be varied from the melting point of bismuth, except so far as the authority to diminish the temperature may be inferred from the words "at or below," which words, when properly construed, mean substantially the same thing as the word about, when the latter is used to qualify the temperature designated as the melting point of lead.

Attempt is made in argument to show that the respective gauges given in the specification to specify the required degree of heat are subject to a much wider variation, and that the patentee did not intend to require that the mixture should be exposed to any higher temperature than that which should prove to be requisite to accomplish the described result. Suppose that could be admitted, still it is not probable that the admission would much vary the case if the apparatus employed should not be changed, and all the conditions for applying the process should remain in full force, as rapid manipulation is an express condition in applying the process of decomposition, which, it is believed, cannot be accomplished in the time allowed unless the high temperature is maintained.

Support to the theory that the gauges given admit of a wider variation than is here supposed is attempted to be drawn from the sentence in the specification which immediately follows the statement that the decomposition of the water becomes more powerful as the heat is increased. Fatty matters such as palm oil, says the patentee, may be changed into fat-acids and glycerin at or below the melting point of bismuth, but he states in the same connection that the heat in such a case has been carried considerably above the

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melting point of lead without any apparent injury ; and he adds that the decomposing action of water becomes more powerful as the heat is increased. Then follows the sentence which is invoked as supporting the theory that the gauges of heat given in the specification, to wit, the melting point of bismuth and the melting point of lead, are subject to indefinite variation.

By starting the apparatus at a low heat, says the patentee, and gradually increasing it, the temperature giving products most suitable to the intended application of the fatty substance employed, can easily be determined. Evidently the sentence should be examined in the light of the context, and when so examined it is quite clear that the patentee never intended to employ the language in any such sense as that which the complainant ascribes to it, as he was speaking of palm oil, which is decomposed at the melting-point of bismuth, and had just remarked that the heat, in applying the process to that substance, had been carried considerably above the melting-point of lead without any apparent injury.

Water, said the patentee, becomes more powerful to decompose such substances as the heat is increased, and then adds, as a precaution to the operator, not to carry it too high above the guages given. You can easily determine what is best in any given case by starting the apparatus at a low heat and gradually increasing it to the gauge given or above, as may appear to be best from the particular substance subjected to the process and the quality of the product obtained by the operation. Not an intimation is given in the sentence that any less heat will accomplish the purpose than that indicated by the gauges mentioned in the specification. On the contrary, the language employed, if it warrants any substantial variation from the prescribed gauges, justifies the inference that the heat may be increased above the temperatures mentioned rather than diminished.

High temperature and pressure are among the leading characteristics of the invention, as appears from the claim and every part of the specification. Doubtful expressions may be subject to construction, but where the language employed is clear and unambiguous it must speak its own construction in the specification of a patent as well as in any other grant issued by public authority. Intention in every case, it may be admitted, is the primary rule of construction, but language invoked to support a particular theory must be such as is fit, when it is compared with the whole instrument, to express the imputed intention, else the theory in question cannot be supported, as courts of justice cannot legislate nor can they add to a grant or contract any stipulation or condition which

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it does not contain. Consequently, the theory of the complainant that the sentence under consideration warrants the conclusion that the claim of the patent includes low as well as high heat must be overruled. *Green v. Wood*, 7 Queen's Bench, 178; *Potter's Dwarries*, 199-200.

Additional observations respecting the apparatus employed by the patentee are unnecessary, as he expressly states that he does not intend to claim it as any part of his invention. Enough has already been remarked also to show what is the nature and scope of the invention and to point out what the question is which is involved in the first issue presented in the pleadings. Construed and defined as explained, the first issue respecting the patent must be found for the complainant, as the proofs in the record bearing upon the question of novelty are not sufficient to overcome the *prima facie* presumption that the patentee is the original and first inventor of what is described in the patent as his invention. *Railroad Co. v. Stimpson*, 14 Peters, 458; *Curtis on Patents*, 4th edition, § 472.

2. Grant all that, still it is insisted by the respondent that the result described in the specification and claim of the patent cannot be accomplished so as to be practically useful by the method and apparatus described in the specification.

Whoever discovers that a certain useful result will be produced in any art, machine, manufacture, or composition of matter by the use of certain means is entitled to a patent for his invention, provided he specifies the means he uses in a manner so full and exact that any one skilled in the science to which it appertains can, by using the means he specifies, without any addition to or subtraction from the described means, produce precisely the result he describes. Such description must be correct, as it is settled law that the patent is void if the described result cannot be obtained by the described means. *O'Reilly v. Morse*, 15 Howard, 119; *Curtis on Patents*, 189.

Nor does it make any difference whether the effect is produced by mechanical principles or by chemical agency or by the application of discoveries in natural science, as in either case the requirement of the act of Congress is imperative that the patentee must describe the method, process, or means he employs in full, clear, and exact terms, and the end which the invention accomplishes.

Inventions, in order that they may be the proper subjects of letters patent, must be new and useful. Utility in most cases is a question of fact, as it usually depends upon the evidence resulting from actual experiment. There are two modes, says Mr. Curtis,

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in which the utility of an invention may be impeached, the second of which is where it appears that it is not capable of being used to effect the object proposed, which is the question presented in the second defense set up by the respondent. *Curtis on Patents*, 4th edition, § 449.

Cases arise also, even where the means described will accomplish the described result, when it cannot be held that the invention is useful if it appears that the operator, in using the described means, is constantly exposed to imminent danger, either from the explosive tendency of the substance to be used or from the liability of the vessel to burst which is required to be employed as means of accomplishing the patented result. Where the patentee finds it necessary to employ any such dangerous means to accomplish the described end it cannot be held that his invention is useful, within the meaning of the patent law, even though it appears that the operator, when no such disaster happens, may be able to work out the described result by the described means, as it is quite clear that Congress, in making provision to secure to inventors the exclusive right to their discoveries, never intended to promote any such as were in their nature constantly dangerous to the operator in employing the described means to accomplish the described result. *Ib.*, §§ 106 and 449.

Apply these rules and it follows that neither an invention which will not enable the operator to accomplish the described result nor one which constantly exposes the operator to the loss of his life or to great bodily harm can be regarded as useful within the meaning of the patent law.

Patents were granted to the supposed inventor by the proper public authorities in England, France, and Belgium, as well as by the proper public authorities in the United States, but the respondent insists that the described result cannot be obtained by the means and in the mode of operation described in the specification, and that the invention has never been reduced to practice by the use of those means or in that mode of operation, either in the United States or in any one of the foreign countries where the same has been patented.

Both branches of the proposition are controverted by the complainant and many depositions and other proofs upon the subject were introduced at the hearing. Witnesses were examined by the complainant to prove the affirmative of the issue, but none of them appear to sustain his views in that behalf unless the scope of the invention is extended beyond the means and mode of operation described in the specification as construed and defined by the court.

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Proofs of the kind, if they exist, could easily have been procured, as both the complainant and his brother, who acted as his agent in efforts to introduce the invention in the United States, were examined as witnesses in the case.

Licenses were given by the complainant in some instances, and he called Charles T. Jones, one of his licensees, to prove the affirmative of the issue under consideration. It appears by his deposition, (*see supra*, p. 505—*REP.*.) that he became a member of a certain firm in 1849, and that the firm were engaged in the manufacture of candles; that they first used the process of saponification with about fourteen per cent. of lime in an open vessel; that they decomposed the lime soap thus obtained by sulphuric acid, using for that purpose two and a half pounds of sulphuric acid to each pound of lime; that they continued to use that process until the fall of 1859, when they introduced the process of saponification under pressure of about one hundred and thirty pounds to the square inch, with only six or seven per cent. of lime, and with a corresponding diminution of sulphuric acid. Subsequently they abandoned the second process used by them and introduced another, which the witness calls the process of the complainant.

On cross-examination he was asked whether water was not used in their first process, and whether he ever knew any process by which fats were decomposed into fat-acids and a solution of glycerin without the intervention of water? to which he answered, water was used in the first process described, but in quantities only slightly in excess of that requisite for preparing the milk of lime; and he added that he did not know that the decomposition of neutral fats into fat-acids and a solution of glycerin had ever been accomplished without the intervention of water.

Counsel for the respondent also requested the witness to describe the process used by his firm which he calls the complainant's process. His answer is, in substance and effect, as follows: He places the melted fat to be treated in a large vessel with a quantity of water equal at least to one-half the bulk or weight of the fat, and subjects the melted fat and water to a steam pressure of three hundred pounds to the square inch for a period of about five hours, keeping the water and fat in intimate contact by pumping the water from the bottom to the top of the vessel and discharging it on the upper surface of the fat, in order that the water may make its way to the bottom of the same; to which he added that he preferred to use half of one per cent. of lime, for the reason, as he states, that that quantity of alkali enables him to perfect the decomposition in four hours at a pressure of two hundred and fifty

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pounds to the square inch with material economy of fuel and of wear and tear of machinery; and he states that since ascertaining the advantages of the lime he has adhered to that mode of operation.

Responsive to another question he states that the apparatus was first put in operation, under the superintendence of the complainant, in September, 1863; that the vessel used was manufactured in Philadelphia; that it comprises a tube thirty-eight feet in length and thirty-eight inches in the internal diameter; that it is made of iron plates of the thickness of a half inch, and a copper tube of nearly the same length, thirty-five inches in diameter, which is placed inside of the iron tube so as to leave an annular space of about one and a half inches between the copper and the iron vessel, whose estimated capacity is about ten thousand pounds of oil and water, but the quantity of fat usually put into the vessel at one time is about six thousand pounds, with about four thousand pounds of water, all of which is placed in the copper vessel, which serves to fill the vessel within three feet of the head or top; and he states that when the decomposition is perfected the water holding the glycerin in solution and the fat-acids are discharged into their respective receptacles.

Two vessels are used instead of one, as directed in the specification, because iron is cheaper than copper, and to secure greater strength to resist the requisite pressure and to save the iron from contact with the fat-acids, which discolors the product and rapidly corrodes the iron to such an extent that it will soon render the vessel unfit for use.

Satisfactory products, as the witness states, may be obtained by the process without lime, though he adheres to the statement that he prefers to use it in order to diminish the pressure which would otherwise be required, and for the economy which it effects in fuel, labor, and time, but he states without any qualification that no one in their manufactory ever mixed any fatty or oily substance with water, in the proportions given in the complainant's specification, and placed the mixture in any vessel in which it could be heated to the melting-point of lead until the operation was completed and thereby obtain free fat-acids and solution of glycerin.

Even without any discussion it is obvious that the means and mode of operation practiced by the witness are widely different from the method or process described in the specification of the complainant's patent. Instead of working in a vessel entirely full of the fat and water and under a pressure sufficient to prevent the presence of steam, the operation under the process of the witness is performed in a vessel only partly filled, which is open at the upper

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end and inclosed in another vessel, and the heat is applied by the introduction of steam from boilers outside. Other differences also exist, as for example, instead of being worked at a temperature of 510° or 612° Fahr., and in a vessel capable of sustaining an internal pressure of two thousand pounds to the square inch, the process of the witness is worked at a temperature represented by a pressure of only three hundred pounds to the square inch, which is a latitude of deviation not warranted by any language to be found in the complainant's specification.

Two other differences may also be mentioned, which are equally persuasive, to show that the method or process practiced by the witness is substantially different from that embodied in the patent of the complainant. Instead of the fat and the water being maintained during the entire operation in a state of intimate mechanical mixture, as required in the specification, a pump is provided, not to force the mixture into the heating vessel, but to be kept constantly at work to draw the water from the bottom of the vessel and to discharge it on top of the charge of fat, in order that it may percolate down through the fat and supply the deficiency occasioned by the fact that the water is constantly being converted into steam.

Ten minutes is the maximum time allowed for the operation in the complainant's specification, but the method or process employed by the witness, instead of effecting the decomposition in ten minutes, requires at least four or five hours, even when he uses a small proportion of lime to assist the chemical action of the heated water.

Besides the differences between the two methods already pointed out, there are others which may be suggested, equally striking and of a character equally persuasive, to show that the two methods are substantially different, as for example, the apparatus employed by the witness consists of two vertical cylinders, one within another, instead of a coil of tubing, with an annular space between the two, as before explained, of an inch and a half.

Fat and water in nearly equal proportions are charged into the inner cylinder, leaving a vacant space at the top of the same of about three feet. Like the coil of tube the outer cylinder is steam-tight, but the inner one is open at the top. Steam for the operation is generated in two separate boilers, which is introduced through the top of the outer cylinder to the space between the two and through the upper end of the inner one, which is open, to facilitate the circulation of the steam, in order that the fat and water in the inner cylinder may be heated to the temperature rep-

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resented by a pressure of two hundred and fifty to three hundred pounds to the square inch; and the witness testified that he regarded the use of the pump and the use of some lime as essential to the use of the apparatus with the greatest economy.

Licensees of the complainant were also examined by the respondent, to wit: Nathaniel Ropes and Nathaniel Ropes, Jr., (*supra*, pp. 519-523—REP.) These witnesses have had great experience in manufacturing candles, and they testify that they know of no place in this country where candles or soap are manufactured from free fat-acids produced by water alone at high temperature and pressure without the use of alkali. They both describe the old saponifying process as consisting in the treatment of fat by water heated in an open vessel, lime being mixed with the water, by which the glycerin was separated from the other constituents of the fat, leaving what some manufacturers call lime soap, or fat-acids and lime, which latter ingredient was afterwards removed by sulphuric acid, the residuum being free fat-acids.

Changes were made in their mode of operation early in the year 1860, which alterations were introduced to them by the brother of the complainant, who experimented in their manufactory several months before he put the apparatus adopted in operation. By that plan they use water in equal proportions with the fat, with a half per cent. of lime and double that quantity of sulphuric acid, the whole being heated to a temperature representing a pressure of about one hundred and fifty pounds to the square inch in a closed vessel for twelve hours. Formerly they conducted the operation in open tubs, using thirteen per cent. of lime with double that quantity of sulphuric acid, but since the new method was introduced by the agent of the complainant they have substituted closed copper tanks in the place of the open tubs, using, however, the same agents to effect the decomposition of the fatty substances, though in different proportions.

Copper tanks are used as receptacles for the fat and the water, but the steam to communicate the heat is generated in a large iron boiler thirty feet in length and forty inches in diameter, with which the copper tank is connected by means of steam pipes furnished with stop-cocks as regulators in the use of the steam. There is also a shaft in the tank having radial arms, which shaft is kept in rotation to cause and preserve an intimate mechanical mixture of the fat and the water during the whole operation.

Instead of having the tank constantly filled with the fat and water the fact is that it is never filled, nor is the mixture kept under a pressure sufficient to prevent the accumulation of steam

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and air, as directed in the specification of the patent described in the bill of complaint. Empty space is left in the tank above the fat and water at the outset sufficient to allow boiling, which space of course would be filled with steam and air. Heat is communicated to the mixture by introducing steam from the large iron boiler into the copper tank, creating a temperature causing a pressure of one hundred and fifty pounds to the square inch.

Several months were employed in making the experiments before the method now in use was finally put in practice by the complainant's agent. He tried it without lime at a pressure of two hundred pounds, allowing twenty-four hours for the operation, but the result was not satisfactory. Dismissing that method he next tried the experiment with fat and water in the proportion of two to one, allowing twenty hours; still the result was unsatisfactory. Next he tried the compound of fat and water in equal proportions, using only half of the water during the first part of the operation, then discharging that and putting into the charge the other half of the water, and he found that the operation produced a good result in twelve hours. Some of the experiments were without lime, but the witnesses state that inasmuch as they found that by the addition of lime they could accomplish the work at a pressure of one hundred and fifty pounds to the square inch and in less time, they have ever since continued the use of lime in their business.

Much discussion of the process introduced on that occasion is unnecessary, as it appears that instead of working at a heat equal to the melting point of lead, in a vessel capable of sustaining an internal pressure of two thousand pounds, these licensees of the complainant use a certain per cent. of lime at a pressure not much above one hundred and fifty pounds; and it appears that they decompose the fat in a vessel not filled with the mixture, nor provided with a mechanical stirrer, and leave a vacant space in the vessel sufficient for circulation, in which steam is not only generated but is introduced from a separate boiler. Differences such as these require no comment except to say that the method is entirely different from that described in the patent in question, and to add that it corresponds much more nearly to the method described in a patent dated May 15th, 1860, subsequently obtained by the complainant, and which was introduced in evidence by the respondent.

Reasons exist besides those disclosed in the testimony of those witnesses to support the conclusion that the complainant never supposed that his patent conferred the exclusive right to use temperatures and pressure to decompose fats with water alone much

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below the gauges given in his specification, and that he had come to doubt, several years before those experiments were made, whether the patented method or process could be accomplished so as to be practically useful by the means and in the mode of operation pointed out in the patent.

His letter, dated London, June 25th, 1856, addressed to a certain firm in Cincinnati, (*supra*, p. 526—REP.,) affords strong support to that conclusion, in which he states that our experiments in the factories here and in Paris have shown that on the large scale the decomposition of fats by water is more conveniently effected by modifying the apparatus originally proposed so that the fat and water are exposed to a comparatively lower heat and pressure for a longer time, instead of a very high pressure for a few minutes. By which means he suggests in the same letter that a considerable quantity of material may be treated at one charge in an ordinary steam-boiler lined with lead or copper, and may be provided with an agitator in the place of using the continuously working pump and coil of pipe, and the suggestion is that at a pressure of two hundred and twenty-five pounds to the square inch tallow, palm oil, or lard stearin may be completely decomposed in five hours.

Nearly two years before the date of that letter, to wit, on the twenty-fifth of March, 1854, the complainant took out a patent in England for the same invention as that described in the patent in issue in this case, and the proofs show that he made various efforts to introduce it into practice in that country. He remained there, it seems, from 1854 to 1859, and it appears that in June, 1854, he exhibited his process in the old form to George F. Wilson, the managing director of the Price Patent Candle Company, and the company entered into a contract with the complainant respecting the same, by which he assigned the said letters patent and the privileges thereby granted to the said company, and that the said company, in consideration of the assignment, covenanted to pay him an annuity of one thousand pounds sterling from the month of October of the following year during the continuance of the patent, subject to various conditions, and among others to be terminated by giving notice to the complainant as therein provided; the company were also to have the use of several other patents therein described, which have since expired.

Proofs were also exhibited showing that the said company have ever since paid the stipulated annuity, but there is no satisfactory evidence in the case to show that they have ever applied the process to produce fat-acids and solution of glycerin by the means and in the mode of operation described in the specification, as construed

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and defined by this court. Some use, it may be presumed, has been made of the patent by the assignees, but what that use is does not very satisfactorily appear. It does appear, however, from a paper read before the British Association, in September, 1855, by the general director of the company, to whom the complainant testifies that he exhibited his process the year previous, that he stated that in our new process the only chemical agents employed for decomposing the neutral fat and for separating its glycerin are steam and heat, and that the only agents used in purifying the glycerin thus obtained are heat and steam. (*Supra*, p. 527—REP.)

Strong confirmation of that is also derived from a paper read by the same person at a session of the Society of Arts, held in that country, January 25th, 1856, also put in evidence by the complainant, (*supra*, pp. 527, 528, 530—REP.,) in which the author says, in speaking of the patented process, "It has yet to be proved how far it can compete successfully with distillation," adding that they had made an arrangement with the inventor which, as he expresses himself, will give them the means of testing its commercial merits, and then he proceeds to state that on witnessing a trial of the process in the small tube apparatus, it struck him that steam passed into the fat at a high temperature should effect by a gentle process what the patentee aimed at effecting by a violent process, to wit, the resolving of the neutral fat into glycerin and fat-acids; finally stating that they had proved that the fact was so and that the glycerin distilled over with the fat-acids though it was no longer combined with those products, evidently showing that the process employed by them was at that time widely different from that claimed by the complainant.

Application for a patent was also made by the complainant to the proper authorities of France during the same year, and it appears that the application was successful, as he immediately commenced negotiations through his patent agent with the firm of Monier & Co., doing business near Paris in that empire, for the sale of the patent, which negotiations resulted in a contract of sale. Pursuant to that contract he transferred the patent to that firm, subject to the condition that the process would effect the results promised by the grantor.

Numerous experiments were subsequently made under the superintendence of the patentee or his brother, for a period of six months, all of which produced results which the evidence shows were entirely useless. They were made in the first place, as the senior partner of the firm states, (*supra*, pp. 527—530—REP.,) by means of a small apparatus brought from London by the patentee,

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which consisted of a hollow iron tube of serpentine form, incased in a cast-iron block from which the two ends of the tube projected —one for receiving the fatty substance used in the experiments for decomposing the same, and the other for discharging the product.

High heat was required for the purpose, and with that view the apparatus was so placed in a furnace constructed of fire-proof bricks that it received all the heat, the flames of which completely enveloped it, and which brought it to an excessive heat, but the witness cannot give the degree of heat, as the apparatus did not contain any gauge to indicate its intensity.

Fatty matter and water were put in a vessel prepared for the purpose, which was provided with a bronze suction and force pump worked by hand, and connected with one end of the iron coil projecting from the cast-iron block, by which the mixture of fatty matter and water was drawn from the receptacle and was forced into and through the iron coil of tube, as the same was incased in the iron block, and out at the opposite end of the same, where it was discharged into another receptacle prepared for the purpose. By means of the furnace the iron tube and the block in which the coil was incased were "heated to an excessive degree," estimated by the witness to exceed 500° Fahr. with an estimated pressure of more than twenty atmospheres. Both the patentee and his brother worked at the experiments ten or fifteen days, but the decomposition of the fatty matter, as the witness states, was never complete, and that they never produced fat-acids and glycerin, the product being only an altered fatty matter, which when washed, showed acrolein to such an extent as to fatigue the workmen who assisted at the experiments. Fifteen of the experiments were made by the patentee aided by two workmen, in the presence of the witness, and he states, without qualification, that none of the experiments succeeded.

Three new apparatuses were subsequently constructed by the brother of the patentee, acting as his agent. Two were constructed in Paris and one in London. Experiments were subsequently made by the brother of the patentee, and in some instances without any regard to the patented process, the aim being to find out if possible the means of overcoming the difficulties manifested in the prior attempts to produce the promised results.

None of his efforts, however, succeeded, though the experiments were continued until the expenditure exceeded forty thousand francs, and it appearing that fat-acids and glycerin could not be produced by the process, the contract was annulled, and the witness affirms that it is impossible to decompose fatty matter and

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obtain fat-acids and glycerin by the method indicated in the complainant's patent. He admits, however, that his firm were subsequently induced, on the return of the patentee to that country, to join with another firm engaged in manufacturing candles, to make a new contract with the same party upon the same basis as the first contract, it being represented that the patentee would introduce a new process, based upon the principles of the patented method, which promised certain success and admirable results. Such a contract was accordingly made, and new experiments were prosecuted for a period of two or three months, but, like the first efforts in that direction, the experiments failed to produce either fat-acids or glycerin. How much these last experiments cost, the witness does not state, but he does state that the experiments were productive of no good, as they produced neither fat-acids nor glycerin.

Remarks respecting the Belgium patent are unnecessary, as no proof was offered to show that the process was ever introduced into practice in that country.

Having failed to accomplish such results in those countries as would show that his process would be practically useful if applied by the means and in the mode of operation described in the specification, and probably having become convinced that the decomposition of fats by water could be more conveniently effected by modifying the described apparatus so that the fat and water would be exposed to a lower heat and pressure for a longer time, as expressed in his letter of the twenty-fifth of June, 1856, the patentee left England in August or September, 1859, and returned to the United States.

Conclusive proof that the patentee did not accomplish results in France, which would show that the patented process, applied by the means and in the mode of operation set forth in the specification, is exhibited in the record of the other case between the same parties, which was heard at the same time. Reference is made to the report of the jury upon organic chemistry made the third of December, 1855, to the international exhibition held in Paris, which is made an exhibit in that case.

Chemists, say the jury, liken neutral fats to compound ether, which was the hypothesis put forth by Chevreul in his investigations of such matters. Ether, it was known, may be decomposed by being heated to a high temperature in close vessels with water, and from that persons were led quite naturally to attempt to effect in the same way the decomposition of neutral fats, and they state that experience has confirmed the assumed theory, which, as the jury say, is the origin of all the new processes of saponification to.

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which they refer, and they add that it was the patentee in this case who first had the idea of applying such reaction on a large scale, which they verify by an extract from the specification of the patent, (*supra*, p. 494—REP.) but, as they report, they visited the manufactory of Monier & Co., where they had the opportunity of seeing the trial of the process in its application to palm oil, and they conclude their report upon the subject as follows, (*supra*, pp. 335–6—REP.:)

“ We are sorry to say that the fatty matter on coming out of the apparatus was not at all deodorized, and, more besides than that, that it gave out a strong odor of acrolein. From the point of view of the quality of the products, this arrangement of apparatus, then, by no means realized the end which the author has proposed. Moreover, in our opinion, the chances of deterioration of a system of apparatus of any kind which works constantly at a temperature capable of exerting a pressure of ninety to one hundred atmospheres are such that it is hardly possible that industry will utilize it, even if the products which it furnishes were irreproachable.”

Made public, as the report was, more than two years before the patentee returned to the United States, it may be presumed that it came to his knowledge before his return.

On the fifteenth of May, 1860, the new patent referred to was granted to him in this country, (see *supra*, pp. 534–536—REP.,) which affords the most conclusive proof that the alleged invention is one of a very different character from that described in the specification of the patent in issue in this case; and yet he states under oath that he verily believes that he is the original and first inventor of the improvement, and that to the best of his knowledge and belief it had not been known or used before his application for the patent, which is utterly repugnant to the pretense that anything which is embodied in that patent was included in the one granted to him more than five years before the latter application was filed.

Experience seems to have greatly modified the views of the patentee, as he now characterizes the improvement as a new and improved method of decomposing fatty and oily substances, and alleges that it is applicable either when water alone is used, or when, in addition to water, a portion of alkali is used to aid the chemical action; and he also alleges that to extract the whole of the glycerin from the fat with a moderate quantity of water, when the lower range of pressure is used, requires considerable time; and he actually states that his invention consists in applying the water to the fat in several successive portions.

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High temperature and pressure are represented as the agents of decomposition; but in the view of the complainant as expressed in that specification the high temperature required may be only that which is represented by a pressure of one hundred and twenty to one hundred and fifty pounds to the square inch. Gauges to indicate the required temperature are dropped, and all idea of rapid manipulation seems to be discarded, as the terms "a considerable time" or "from two to three hours" are substituted in the place of "ten minutes."

Vessels of very great strength are no longer required, as the patentee states that his invention may be applied to any of the different forms of boilers or tanks used for the decomposition of fats by water at a high temperature or pressure, meaning, doubtless, that the terms high temperature and pressure shall be understood in the same sense in which he employs them in a subsequent part of the same paragraph. Water may be supplied when wanted, and, of course, it is of no moment even if some of it is converted into steam; nor does the specification contain any requirement that the heating apparatus shall be kept entirely full of the mixture, or that neither steam nor air shall accumulate therein during the time required for decomposition, or, in other words, the old specification is divested of every one of its extreme conditions, and the inventor, under his new patent, is left free to claim every means and every mode of operation which the ingenuity of man ever did or ever can invent or discover. Further remarks respecting it, however, may be omitted, as it is not the subject of litigation in this case.

Chemical and mechanical experts were examined as witnesses on both sides in about equal numbers. Those called by the complainant express the opinion that the patented process may be applied by the means and in the mode of operation described in the specification so as to accomplish useful results, and of a character to give commercial value to the new product. On the other hand, those examined by the respondent express opinions widely different, and most or all of them are of the opinion not only that the means and mode of operation described in the patent cannot be so applied that the invention will be practically useful, but several of them state that the attempt to apply it without the exercise of extraordinary precautions must be attended with danger to the operator.

Most of the expert witnesses made experiments in applying the process, and in the course of their examination were required to state the results of the same as supporting their opinions, but experiments made, as most of these were, with small apparatuses

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admitting only a small charge of the fatty substance or mixture to be treated, are not entitled to much weight in determining such an issue, however satisfactory the analysis may have been to the chemist who conducted it, as the issue necessarily involves very difficult questions of mechanics as well as of chemistry.

Taken as a whole the evidence convinces the court that the patentee never did succeed in introducing his invention into practical use by the means and in the mode of operation described in the specification to such an extent as would warrant the court in finding that issue in his favor.

Doubts of a very serious character are also entertained by the court whether the patented process, unless divested of its extreme and unparalleled conditions, can ever be reduced to practice by the means and in the mode of operation described in the specification, so as to be practically useful or safe to the operator, but the proofs are very conflicting upon the point, and inasmuch as it is impossible to foresee what future experiments may do in the way of overcoming the existing doubts and difficulties, the court is not inclined to rest their decision entirely upon that ground.

3. Passing from that, the next question is whether the proofs show that the respondent practiced and used the patented process of the complainant, when properly construed and defined, as charged in the bill of complaint.

Such an inquiry cannot be intelligently considered without first ascertaining what the respondent's process is, as it is obvious that the two processes must be compared in order to determine whether they are substantially the same in principle and mode of operation, or substantially different, which is the criterion by which to determine every such issue as the one under consideration.

Factories have been erected by the respondent for manufacturing candles, and he is largely engaged in that business, but he denies that he uses the alleged improvement of the complainant, or any method of decomposing neutral fats embracing the means and mode of operation described in the specification of the complainant's patent. He admits that in his process of manufacture he uses water at high temperature, and steam, and that he also uses such pressure as arises from the expansive force of hot water or steam in a close vessel; that he is engaged in manufacturing candles under and in pursuance of letters patent granted by the United States of the twenty-fifth of January, 1859, to Wright and Fouché, as subsequently amended, but he denies that he employs either the method, process, or apparatus described in the complainant's specification.

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Appropriate means are at hand to enable the court to make the comparison, as the patent under which the respondent works was given in evidence at the hearing. (See it, *supra*, pp. 485-488—REP.) On the face of the patent it purports to be a new and useful improvement in process for decomposing fats, and it appears that the inventors obtained a patent for the improvement in France two years before the complainant left England to return to the United States, and more than three years before the complainant obtained his new patent in this country, in which he left out all of the extreme and unexampled conditions of the old patent, and in which he stated under oath that he verily believed he was the original and first inventor of the improvement, and that it had never been known or used before his then application was filed.

Wright and Fouché describe their invention in their specification as a new apparatus destined to produce chemical decomposition by means of superheated steam and water, and that it is chiefly intended for the decomposition of fatty substances into fat-acids and glycerin, and they particularly describe the means to be employed and the mode of operation when the patented method is applied to that purpose. Drawings are annexed to the specification, which contain figures of the apparatus to be employed in applying the patented process in the decomposition of fatty substances to obtain fat-acids and glycerin.

Two vessels constructed of iron or copper are required for the purpose—one is called the boiler in the specification, which it is said may be of any form, and the other is called the cylinder, and is placed on a base and elevated higher than the boiler. Both are required to be sufficiently strong to resist a pressure of from ten to twenty atmospheres, and of a capacity varying according to the requirements of the manufacture, and they are connected by a tube extending from the bottom of the boiler to the bottom of the cylinder, and also by another tube, called in the specification the tube for ascension to conduct the superheated water from the boiler to the upper part of the cylinder, which terminates in the interior of the cylinder by a rose-jet, or holes may be made in the end of it, so as to distribute the water uniformly in the cylinder and to insure the intimate contact between the superheated water and the fatty substance subjected to the process. Fatty substances to be subjected to the process are placed in the cylinder, which, with other things, is furnished with a pressure gauge to indicate the pressure in the apparatus used with devices to indicate the height and level of the substance and of the water in the cylinder.

Everything being arranged as described for applying the process,

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the boiler is completely filled with water and the cylinder is filled with water to one third of his height, and then it is filled to the level of the upper cock, shown in the drawings, with the fatty substances to be decomposed, the latter substance or substances being above the water in the cylinder, which is still not filled, there being a vacant space in the cylinder above the fatty substance. Heat is then applied to the boiler, which is placed in a furnace where it may be exposed to fire. By the direction the heat is to be gradually applied until the pressure gauge indicates a pressure of ten to twenty atmospheres, according to the nature of the fatty substance to be decomposed.

Minute description is then given of what it is claimed takes place in the apparatus. Superheated water it is said acquires an ascending motion, whence it results that the heated water in the boiler ascends through the described tube into the cylinder, and being forcibly drawn out through the holes in the described rose-jet, passes through the fatty substance to the vacant space above, where the temperature being reduced, it descends through the other described tube to the bottom of the boiler, where it is again heated and then recommences its ascending motion as in the first instance, and so on during the operation.

Suggestion is made that the operation may be continued from five to eight hours, according to the nature of the fatty substance composing the charge and the degree of heat and pressure applied, and it is claimed that the result will be that the fatty substance will be decomposed and that the product will be fat-acids and glycerin.

In their specification they admit that it is a well-known scientific fact that fatty substances may be decomposed by water under the influence of heat and pressure, which could not well be denied in view of the fact that water or its equivalent was used in all the prior processes of saponification, and of the great mass of other evidence to support that proposition which is embodied in this record. Consequently those inventors do not claim to be the discoverers of that scientific truth. All they claim is that their invention consists of an apparatus wherein water and the fatty substances are heated separately in two different boilers, the first boiler being heated in the furnace, called in the specification the source of heat, while the second boiler, called the cylinder, is heated from the first boiler.

Unlike as the two processes are in so many material characteristics, it seems almost a work of supererogation to enter much into details, as the dissimilarity is apparent in the whole description of

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the respective inventions, except that both contemplate the employment of heat and water in effecting the decomposition of fatty substances; and even in that respect, they are widely different, as the patentees under whose patent the respondent works employ only moderate heat as compared with the other process, never exceeding in practice what is represented by a pressure of one hundred and eighty pounds to the square inch; and they also employ steam as well as water in a vessel which is never filled with the fatty substance or with water or with both combined.

None of the other characteristic conditions of the complainant's invention are found in the specification of the patent under which the respondent works, full proof of which is shown in the enumeration of those conditions, which are as follows:

1. That the fatty substances to be treated must be first mixed with water equal in bulk to one third or one half of the fatty substance.
2. That for that purpose the fatty substance and the water in the proportions mentioned must be put into the described receiving vessel, where it must be subjected to the action of the piston with the perforated disk until it causes the fat and the water to form an emulsion or intimate mechanical mixture.
3. That the mixture so formed must then be driven by a force-pump through the connecting tube into the heating vessel, whether a coil of iron tubing or other convenient vessel, and be subjected to a high degree of heat and pressure for ten minutes to effect the decomposition of the fatty substance.
4. That the heating vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam.
5. That the heating vessel must be filled with the mixture and kept entirely full of it throughout the operation.
6. That the only means suggested to fulfill the condition is the forcing pump, as the provision is that if necessary the speed of the forcing pump should be increased.
7. That the heating vessel must be kept full of the mixture, so that no steam or air shall accumulate in the heating vessel, and to preserve the intimate mechanical mixture of the fatty substance and the water, as the description does not suggest any means to supply any deficiency of water in any other way, whether occasioned by evaporation or by its being converted into steam.
8. That the temperature required for the operation, if the fatty substance be such as palm oil, is 510° Fahr., or if such as beef tal-

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low or the tallow of sheep, it must be carried to 610° Fahr., or the melting-point of lead.

9. That the heating vessel should be tested before taken into use by a pressure of ten thousand pounds, and should be of sufficient strength to be safe at a working pressure of two thousand pounds to the square inch.

10. That the apparatus must be furnished with gauges to indicate the required heat to be applied in the operation, and with a refrigerator near the exit end of the apparatus to cool down the product from its high temperature below 212° Fahr., before it is discharged into the receiving vessel.

Compare these conditions with the specification of the patent under which the respondent works and it is clear that he does not use any such method, process, or operation as those described in the letters patent of the complainant.

Witnesses have been examined by each party as experts, to assist the court in making the comparison, but they differ so widely in their statements as to afford the court but little aid in the solution of the question. Attention is also drawn to the fact that several circuit judges have decided otherwise, to which the proper reply seems to be that the proofs before the court are much fuller than on any former occasion, and that the conclusion stated is the best one the court can form after having given the whole record an attentive examination.

Expert witnesses on both sides have been examined also upon the issue of infringement, but they differ so widely in opinion that their testimony affords the court but little aid in deciding the question, which after all must depend chiefly upon the comparison of the descriptive portions of the two specifications. *Hill v. Thompson*, 1 Webster's Patent Cases, 232; *Turner v. Winter*, Ib., 77.

Two things are not the same under the patent law when one is in practice substantially better than the other in a case where the second improvement is not gained by the use of the same means or known mechanical equivalents. *Curtis on Patents*, 4th edition, § 330.

Patent laws have for their leading purpose the encouragement of useful inventions. Practical utility is their object, and it would be strange if with such object in view the law should consider two things substantially the same which practically and in reference to their utility are substantially different. Ib., § 331.

Slight differences in degree cannot be regarded as of weight in determining the question of substantial similarity or substantial difference, but in all cases the question whether the difference in

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degree is sufficient or insufficient to prove the alleged infringement is a question of fact to be determined by the jury in an action at law, or by the court in a suit in equity. *Cahoon v. Ring*, 1 Clifford, 621.

Differences, however, so great as are exhibited in this record relieve the case, in the judgment of the court, from all doubt, and warrant the conclusion that the process under which the respondent works is substantially different from that of the complainant.

On the twenty-third of November, 1867, the patent of the complainant was extended for seven years from the expiration of the fourteen years for which the original patent was granted. Subsequently, to wit, on the sixth of March, 1871, the complainant instituted a second suit against the respondent founded upon the extended patent, which is number 340 on the calendar. Both cases were heard at the same time. Suffice it to say in respect to the latter that the pleadings, issues, and proofs in the two cases are substantially the same, and that the latter must be disposed of in the same way as the preceding case.

Decrees were entered in these cases respectively in the Circuit Court in favor of the complainant, each of which must be reversed.

DECREE IN EACH CASE REVERSED with costs, and the cases respectively remanded with direction to DISMISS the respective bills of complaint.

Justices SWAYNE, STRONG, and BRADLEY dissented.

Mr. Justice DAVIS took no part in the judgment.

KLEIN v. RUSSELL.

(19 Wallace, 433.)

1. Where on a trial for infringement of a reissue of letters patent—the defense being a want of novelty—a defendant requests the court below to direct the jury to bring in a verdict for the defendant (no objection being then or having during the trial been taken by such defendant, that the reissue was for a different invention from that secured by the original patent,) and the request for the direction just stated not having been on that ground, but on the ground of the evidence "relative to the alleged prior use of the process, and the novelty, and usefulness, character, and effect of the alleged invention being so decisive as to entitle the defendant to a verdict"—and the request has been refused—the defendant cannot assign as error the refusal to give the direction, because the reissue was not for the same invention as was the original patent.
2. A reissue is *prima facie* to be presumed to be for the same invention as is the original patent.

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3. A direction to find for one party or the other can only be given where there is no conflict of evidence.
4. Where, on a question of novelty in a patented process, a witness has stated that, after the patent, he was using a particular process which he had been using for twenty years before, (a process which the defendant affirmed to be the same as the one patented,) it is allowable to ask the witness whether the patentee had not forbid him to use what he was then using; the purpose of the question being to show that the patentee had forbid him, and that the witness then disclaimed using the patented process, and said that he had "a way of his own" which he was using.
5. It is allowable to ask a witness of the opposite side, who has referred to and said that he had seen and copied a paper in reference to the expenses of the suit, subscribed by various persons, what were the contents of the paper; the purpose of the question being to show by the answer that the defendant's witnesses were in a combination to defeat the plaintiff and to share the expense of the opposition. It was not necessary prior to the question to call on any one to produce the original paper.
6. When a patent is on trial and the question in issue involves the matter of novelty, utility, and *modus operandi*, it is proper enough to ask what the effect of the patented invention has been.
7. In construing a patent courts should proceed in a liberal spirit, so as to sustain the patent and the construction claimed by the patentee, if it can be done consistently with the language which he has employed; and this applies to a reissue as much as to an original patent.
8. Hence when there has been a reissue on an original patent, and the meaning of the specification and claim in the reissue is not perfectly clear, they may be read by the light of the specification and claim of the original patent, and if they can be sustained consistently with the language there used, be sustained by them.
9. A request which asks the court to charge that if a process patented was known to others more than two years *before the plaintiff applied for his patent*, the plaintiff's patent is void—is rightly refused.
10. Where a specification in describing the mode of treating articles with a patented process (a liquid) said that "it is desirable to heat the latter to or near the boiling-point," and there was testimony that if *applied* while in that state to the articles to be treated it would greatly injure them, as also that if it was suffered to cool before being applied it possessed virtue, a request which asked the court to charge that the proper construction of the patent is that if the liquid applied at such a temperature is injurious and pernicious, the patent is void for want of utility, is rightly modified by a change which makes the charge say to the jury that the proper construction is that the liquid should be applied at or near the boiling-point under the *common knowledge of persons skilled in the art* of treating the articles to be affected and to procure the desired results, and in reference to the fact whether (see *infra*, p. 596, note) such knowledge would make them wait until it was partially cooled before its application; and that if the application of the liquid at such a temperature as is required by the specification, *under this qualification*, was injurious and pernicious, then that the patent was void for want of utility.
11. Where one claim of a patent was for treatment by a compound composed of a liquid and other ingredients mentioned, a request for an instruction that the addition to the liquid of the ingredients is not patentable if such addition does not change the properties of the liquid, or its effect or usefulness, when applied to the *purposes mentioned in the patent*, is rightly modified by charging as requested with the addition of the words "or to other like purposes."
12. A claim for a compound is not void because the specification does not prescribe

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exact and unvarying proportions in the ingredients of a compound; some of the ingredients being, *ex. gr.*, coloring matter, which the specification says may "be omitted or modified as desired."

13. A court is not bound to comply with requests for charges on points not raised by the evidence; nor when it has charged generally on the subject in its general charge, to repeat itself by answering requests for the same instructions.

ERROR to the Circuit Court for the Northern District of New York; in which court one Russell, a glover, of Gloversville, New York, brought suit against Klein, glover, in the same place, for an infringement of a patent. The plaintiff got a verdict; the defendant having in the course of the trial taken various exceptions, on which the case was now here.

The case was thus:

In August, 1869, Russell obtained a patent for a new and useful improved process of treating leather so as to render it suitable for the manufacture of gloves. The specification said:

"My invention consists in a novel treatment of what is known as 'bark-tanned lamb or sheep skin,' an article used by bookbinders, and which, while sufficiently soft and supple for the purposes of their trade, is too harsh and stiff for glove-making and a variety of other purposes. This objection is removed by my treatment of the article, and the leather rendered so soft and free, yet full in respect of body, as to adapt it, among other purposes or uses, to the making of what are termed 'dogskin gloves.'

"The process I adopt, and which constitutes my invention, is as follows: I take of 'fat liquor' obtained in scouring deerskin after tanning in oil, say ten gallons, and *warm the same by heating to or near the boiling-point*. I then add to such *heated* fat liquor eight ounces of sal soda, twelve ounces of common salt, one pint of soft-soap, and four ounces of Venetian red, and stir and mix these several ingredients with the fat liquor. This forms the treating mixture or compound; and when made in the foregoing quantity will suffice for five or six dozen skins, but of course such quantity may be more or less varied, as may also the proportions of the ingredients; and the Venetian red or other coloring matter is modified or omitted as desired.

"To effect the treatment hereinbefore referred to, of the bark-tanned lamb or sheep skins, I lay said skin on a table or other suitable surface, and *rub the above-described compound* on to both sides of it, using for the purpose a horse or other suitable brush or rubber, by which it can be worked into the skin, that is afterward hung out to dry, and subsequently 'staked,' when the character of the skin will be found entirely changed from harshness to softness,

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and in other respects, thereby adapting it to the manufacture of gloves of the description previously named, and to a variety of other purposes for which said skin was not suitable prior to the treatment of it I have herein described."

The claim was thus:

"What is here claimed and desired to be secured by letters patent is the process *substantially as herein described*, of treating bark-tanned lamb or sheep skin by means of a *compound* composed and applied *essentially as specified*."

On the 1st of February, 1870, Russell got a reissue of this patent under the thirteenth section of the Patent Act, (5 Stat. at Large, 122,) which permits a patentee, whenever any patent is "inoperative or invalid by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification as his own invention more than he had a right to claim as new, if the error has arisen by inadvertency, accident, or mistake," to apply for a new patent, and in such case authorizes a new patent to be issued for "*the same invention*," in accordance with the patentee's corrected description and specification.

In the reissue, the invention having been described exactly as in the original patent, the specification said:

"The *principal* feature of the invention consists in the employment of what is known amongst tanners and others as 'fat liquor,' which is ordinarily obtained by scouring deerskins after tanning in oil, but which, when it is not convenient to obtain in this manner, may be produced as a liquor having the same character obtained by the cutting of oil with a suitable alkali.

In treating leather with the 'fat liquor,' it is *desirable* to *heat* the latter *to or near the boiling-point*, and it is *preferred* to use the same in connection with other ingredients. Thus, for instance, there may be added to each ten gallons of such heated fat liquor eight ounces of sal soda, twelve ounces common salt, one pint of soft soap or an equivalent quantity of hard soap, and four ounces of Venetian red, such ingredients to be well stirred and mixed with the fat liquor.

"This forms a good treating mixture or compound, and, when made in the foregoing quantity, will suffice for five or six dozen skins; but, of course, such quantity may be more or less varied, as may also the proportions of the ingredients, and the Venetian red, or other coloring matter, *be modified or omitted as desired*.

"To effect the treatment hereinbefore referred to, of the bark-

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tanned lamb or sheep skin, the same should be *well dipped in* or saturated with the *fat liquor* OR *compound* of which fat liquor is the base. This may be done by laying the skin to be treated on a table or other suitable surface and rubbing the *fat liquor* OR *compound* on or into both sides of the skin, using for the purpose a horse or other suitable brush or rubber, by which it can be worked into the skin, that is afterward hung out to dry, and subsequently 'staked,' when the character of said skin will be found entirely changed from harshness to softness, and other respects, thereby adapting it to the manufacture of gloves of the description previously named, and to a variety of other purposes for which said skin was not suitable prior to the treatment of it I have herein described."

The claim was thus:

"What is here claimed and desired to be secured by letters patent is:

"1. The employment of *fat liquor* in the treatment of leather substantially as specified.

"2. The process, substantially as herein described, of treating bark-tanned lamb or sheep skin by means of a *compound* composed and applied essentially as specified."

Upon this reissue Russell sued Klein as an infringer. His allegation was that bark-tanned leather before his treatment of it was harsh, "squeaky," and unsuitable for gloves; but that by his process, which, as he alleged, included *heating* the fat liquor, the "squeak" was removed, and the leather rendered soft, pliable, and suitable for a fine glove; that the treatment costing little greatly enhanced the value of the leather, and furnished a cheaper material for gloves than any other of the same quality and value.

The plaintiff's charge of infringement was wholly confined to the use of his process, including heat; and there was no allegation that the defendant had violated the plaintiff's rights by using fat liquor without heating it.

The defense was want of novelty. The case was heard before the district judge, sitting on the circuit. Numerous witnesses in behalf of the defendant swore that the application of fat liquor to leather, for the purpose of making it soft and pliable, had been known and in more or less use for many years; though they did not swear clearly that the application of fat liquor in a *heated* state with the effects which, in *that* state, it produced had been thus known or in use; and there was no proof by them of any use of fat liquor since the plaintiff's process had been patented otherwise

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admitting only a small charge of the fatty substance or mixture to be treated, are not entitled to much weight in determining such an issue, however satisfactory the analysis may have been to the chemist who conducted it, as the issue necessarily involves very difficult questions of mechanics as well as of chemistry.

Taken as a whole the evidence convinces the court that the patentee never did succeed in introducing his invention into practical use by the means and in the mode of operation described in the specification to such an extent as would warrant the court in finding that issue in his favor.

Doubts of a very serious character are also entertained by the court whether the patented process, unless divested of its extreme and unparalleled conditions, can ever be reduced to practice by the means and in the mode of operation described in the specification, so as to be practically useful or safe to the operator, but the proofs are very conflicting upon the point, and inasmuch as it is impossible to foresee what future experiments may do in the way of overcoming the existing doubts and difficulties, the court is not inclined to rest their decision entirely upon that ground.

3. Passing from that, the next question is whether the proofs show that the respondent practiced and used the patented process of the complainant, when properly construed and defined, as charged in the bill of complaint.

Such an inquiry cannot be intelligently considered without first ascertaining what the respondent's process is, as it is obvious that the two processes must be compared in order to determine whether they are substantially the same in principle and mode of operation, or substantially different, which is the criterion by which to determine every such issue as the one under consideration.

Factories have been erected by the respondent for manufacturing candles, and he is largely engaged in that business, but he denies that he uses the alleged improvement of the complainant, or any method of decomposing neutral fats embracing the means and mode of operation described in the specification of the complainant's patent. He admits that in his process of manufacture he uses water at high temperature, and steam, and that he also uses such pressure as arises from the expansive force of hot water or steam in a close vessel; that he is engaged in manufacturing candles under and in pursuance of letters patent granted by the United States of the twenty-fifth of January, 1859, to Wright and Fouché, as subsequently amended, but he denies that he employs either the method, process, or apparatus described in the complainant's specification.

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Appropriate means are at hand to enable the court to make the comparison, as the patent under which the respondent works was given in evidence at the hearing. (See it, *supra*, pp. 485—488—REP.) On the face of the patent it purports to be a new and useful improvement in process for decomposing fats, and it appears that the inventors obtained a patent for the improvement in France two years before the complainant left England to return to the United States, and more than three years before the complainant obtained his new patent in this country, in which he left out all of the extreme and unexampled conditions of the old patent, and in which he stated under oath that he verily believed he was the original and first inventor of the improvement, and that it had never been known or used before his then application was filed.

Wright and Fouché describe their invention in their specification as a new apparatus destined to produce chemical decomposition by means of superheated steam and water, and that it is chiefly intended for the decomposition of fatty substances into fat-acids and glycerin, and they particularly describe the means to be employed and the mode of operation when the patented method is applied to that purpose. Drawings are annexed to the specification, which contain figures of the apparatus to be employed in applying the patented process in the decomposition of fatty substances to obtain fat-acids and glycerin.

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the boiler is completely filled with water and the cylinder is filled with water to one third of his height, and then it is filled to the level of the upper cock, shown in the drawings, with the fatty substances to be decomposed, the latter substance or substances being above the water in the cylinder, which is still not filled, there being a vacant space in the cylinder above the fatty substance. Heat is then applied to the boiler, which is placed in a furnace where it may be exposed to fire. By the direction the heat is to be gradually applied until the pressure gauge indicates a pressure of ten to twenty atmospheres, according to the nature of the fatty substance to be decomposed.

Minute description is then given of what it is claimed takes place in the apparatus. Superheated water it is said acquires an ascending motion, whence it results that the heated water in the boiler ascends through the described tube into the cylinder, and being forcibly drawn out through the holes in the described rose-jet, passes through the fatty substance to the vacant space above, where the temperature being reduced, it descends through the other described tube to the bottom of the boiler, where it is again heated and then recommences its ascending motion as in the first instance, and so on during the operation.

Suggestion is made that the operation may be continued from five to eight hours, according to the nature of the fatty substance composing the charge and the degree of heat and pressure applied, and it is claimed that the result will be that the fatty substance will be decomposed and that the product will be fat-acids and glycerin.

In their specification they admit that it is a well-known scientific fact that fatty substances may be decomposed by water under the influence of heat and pressure, which could not well be denied in view of the fact that water or its equivalent was used in all the prior processes of saponification, and of the great mass of other evidence to support that proposition which is embodied in this record. Consequently those inventors do not claim to be the discoverers of that scientific truth. All they claim is that their invention consists of an apparatus wherein water and the fatty substances are heated separately in two different boilers, the first boiler being heated in the furnace, called in the specification the source of heat, while the second boiler, called the cylinder, is heated from the first boiler.

Unlike as the two processes are in so many material characteristics, it seems almost a work of supererogation to enter much into details, as the dissimilarity is apparent in the whole description of

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None of the other characteristic conditions of the complainant's invention are found in the specification of the patent under which the respondent works, full proof of which is shown in the enumeration of those conditions, which are as follows:

1. That the fatty substances to be treated must be first mixed with water equal in bulk to one third or one half of the fatty substance.

2. That for that purpose the fatty substance and the water in the proportions mentioned must be put into the described receiving vessel, where it must be subjected to the action of the piston with the perforated disk until it causes the fat and the water to form an emulsion or intimate mechanical mixture.

3. That the mixture so formed must then be driven by a force-pump through the connecting tube into the heating vessel, whether a coil of iron tubing or other convenient vessel, and be subjected to a high degree of heat and pressure for ten minutes to effect the decomposition of the fatty substance.

4. That the heating vessel must be closed and of great strength, so that the requisite amount of pressure may be applied to prevent the conversion of the water into steam.

5. That the heating vessel must be filled with the mixture and kept entirely full of it throughout the operation.

6. That the only means suggested to fulfill the condition is the forcing pump, as the provision is that if necessary the speed of the forcing pump should be increased.

7. That the heating vessel must be kept full of the mixture, so that no steam or air shall accumulate in the heating vessel, and to preserve the intimate mechanical mixture of the fatty substance and the water, as the description does not suggest any means to supply any deficiency of water in any other way, whether occasioned by evaporation or by its being converted into steam.

8. That the temperature required for the operation, if the fatty substance be such as palm oil, is 510° Fahr., or if such as beef tal-

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Compare these conditions with the specification of the patent under which the respondent works and it is clear that he does not use any such method, process, or operation as those described in the letters patent of the complainant.

Witnesses have been examined by each party as experts, to assist the court in making the comparison, but they differ so widely in their statements as to afford the court but little aid in the solution of the question. Attention is also drawn to the fact that several circuit judges have decided otherwise, to which the proper reply seems to be that the proofs before the court are much fuller than on any former occasion, and that the conclusion stated is the best one the court can form after having given the whole record an attentive examination.

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Differences, however, so great as are exhibited in this record relieve the case, in the judgment of the court, from all doubt, and warrant the conclusion that the process under which the respondent works is substantially different from that of the complainant.

On the twenty-third of November, 1867, the patent of the complainant was extended for seven years from the expiration of the fourteen years for which the original patent was granted. Subsequently, to wit, on the sixth of March, 1871, the complainant instituted a second suit against the respondent founded upon the extended patent, which is number 340 on the calendar. Both cases were heard at the same time. Suffice it to say in respect to the latter that the pleadings, issues, and proofs in the two cases are substantially the same, and that the latter must be disposed of in the same way as the preceding case.

Decrees were entered in these cases respectively in the Circuit Court in favor of the complainant, each of which must be reversed.

DECREE IN EACH CASE REVERSED with costs, and the cases respectively remanded with direction to DISMISS the respective bills of complaint.

Justices SWAYNE, STRONG, and BRADLEY dissented.

Mr. Justice DAVIS took no part in the judgment.

KLEIN v. RUSSELL.

(19 Wallace, 433.)

1. Where on a trial for infringement of a reissue of letters patent—the defense being a want of novelty—a defendant requests the court below to direct the jury to bring in a verdict for the defendant (no objection being then or having during the trial been taken by such defendant, that the reissue was for a different invention from that secured by the original patent,) and the request for the direction just stated not having been on that ground, but on the ground of the evidence "relative to the alleged prior use of the process, and the novelty, and usefulness, character, and effect of the alleged invention being so decisive as to entitle the defendant to a verdict"—and the request has been refused—the defendant cannot assign as error the refusal to give the direction, because the reissue was not for the same invention as was the original patent.
2. A reissue is *prima facie* to be presumed to be for the same invention as is the original patent.

Syllabus.

3. A direction to find for one party or the other can only be given where there is no conflict of evidence.
4. Where, on a question of novelty in a patented process, a witness has stated that, after the patent, he was using a particular process which he had been using for twenty years before, (a process which the defendant affirmed to be the same as the one patented,) it is allowable to ask the witness whether the patentee had not forbid him to use what he was then using; the purpose of the question being to show that the patentee had forbid him, and that the witness then disclaimed using the patented process, and said that he had "a way of his own" which he was using.
5. It is allowable to ask a witness of the opposite side, who has referred to and said that he had seen and copied a paper in reference to the expenses of the suit, subscribed by various persons, what were the contents of the paper; the purpose of the question being to show by the answer that the defendant's witnesses were in a combination to defeat the plaintiff and to share the expense of the opposition. It was not necessary prior to the question to call on any one to produce the original paper.
6. When a patent is on trial and the question in issue involves the matter of novelty, utility, and *modus operandi*, it is proper enough to ask what the effect of the patented invention has been.
7. In construing a patent courts should proceed in a liberal spirit, so as to sustain the patent and the construction claimed by the patentee, if it can be done consistently with the language which he has employed; and this applies to a reissue as much as to an original patent.
8. Hence when there has been a reissue on an original patent, and the meaning of the specification and claim in the reissue is not perfectly clear, they may be read by the light of the specification and claim of the original patent, and if they can be sustained consistently with the language there used, be sustained by them.
9. A request which asks the court to charge that if a process patented was known to others more than two years *before the plaintiff applied for his patent*, the plaintiff's patent is void—is rightly refused.
10. Where a specification in describing the mode of treating articles with a patented process (a liquid) said that "it is desirable to heat the latter *to or near the boiling-point*," and there was testimony that if *applied* while in that state to the articles to be treated it would greatly injure them, as also that if it was suffered to cool before being applied it possessed virtue, a request which asked the court to charge that the proper construction of the patent is that if the liquid applied at such a temperature is injurious and pernicious, the patent is void for want of utility, is rightly modified by a change which makes the charge say to the jury that the proper construction is that the liquid should be applied at or near the boiling-point under the *common knowledge of persons skilled in the art* of treating the articles to be affected and to procure the desired results, and in reference to the fact whether (see *infra*, p. 596, note) such knowledge would make them wait until it was partially cooled before its application; and that if the application of the liquid at such a temperature as is required by the specification, *under this qualification*, was injurious and pernicious, then that the patent was void for want of utility.
11. Where one claim of a patent was for treatment by a compound composed of a liquid and other ingredients mentioned, a request for an instruction that the addition to the liquid of the ingredients is not patentable if such addition does not change the properties of the liquid, or its effect or usefulness, when applied to the *purposes mentioned in the patent*, is rightly modified by charging as requested with the addition of the words "*or to other like purposes*."
12. A claim for a compound is not void because the specification does not prescribe

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exact and unvarying proportions in the ingredients of a compound; some of the ingredients being, *ex. gr.*, coloring matter, which the specification says may "be omitted or modified as desired."

13. A court is not bound to comply with requests for charges on points not raised by the evidence; nor when it has charged generally on the subject in its general charge, to repeat itself by answering requests for the same instructions.

ERROR to the Circuit Court for the Northern District of New York; in which court one Russell, a glover, of Gloversville, New York, brought suit against Klein, glover, in the same place, for an infringement of a patent. The plaintiff got a verdict; the defendant having in the course of the trial taken various exceptions, on which the case was now here.

The case was thus:

In August, 1869, Russell obtained a patent for a new and useful improved process of treating leather so as to render it suitable for the manufacture of gloves. The specification said:

"My invention consists in a novel treatment of what is known as 'bark-tanned lamb or sheep skin,' an article used by bookbinders, and which, while sufficiently soft and supple for the purposes of their trade, is too harsh and stiff for glove-making and a variety of other purposes. This objection is removed by my treatment of the article, and the leather rendered so soft and free, yet full in respect of body, as to adapt it, among other purposes or uses, to the making of what are termed 'dogskin gloves.'

"The process I adopt, and which constitutes my invention, is as follows: I take of 'fat liquor' obtained in scouring deerskin after tanning in oil, say ten gallons, and *warm the same by heating to or near the boiling-point*. I then add to such heated fat liquor eight ounces of sal soda, twelve ounces of common salt, one pint of soft-soap, and four ounces of Venetian red, and stir and mix these several ingredients with the fat liquor. This forms the treating mixture or compound; and when made in the foregoing quantity will suffice for five or six dozen skins, but of course such quantity may be more or less varied, as may also the proportions of the ingredients; and the Venetian red or other coloring matter is modified or omitted as desired.

"To effect the treatment hereinbefore referred to, of the bark-tanned lamb or sheep skins, I lay said skin on a table or other suitable surface, and *rub the above-described compound* on to both sides of it, using for the purpose a horse or other suitable brush or rubber, by which it can be worked into the skin, that is afterward hung out to dry, and subsequently 'staked,' when the character of the skin will be found entirely changed from harshness to softness,

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and in other respects, thereby adapting it to the manufacture of gloves of the description previously named, and to a variety of other purposes for which said skin was not suitable prior to the treatment of it I have herein described."

The claim was thus:

"What is here claimed and desired to be secured by letters patent is the process *substantially as herein described*, of treating bark-tanned lamb or sheep skin by means of a compound composed and applied *essentially as specified*."

On the 1st of February, 1870, Russell got a reissue of this patent under the thirteenth section of the Patent Act, (5 Stat. at Large, 122,) which permits a patentee, whenever any patent is "inoperative or invalid by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification as his own invention more than he had a right to claim as new, if the error has arisen by inadvertency, accident, or mistake," to apply for a new patent, and in such case authorizes a new patent to be issued for "*the same invention*," in accordance with the patentee's corrected description and specification.

In the reissue, the invention having been described exactly as in the original patent, the specification said:

"The principal feature of the invention consists in the employment of what is known amongst tanners and others as 'fat liquor,' which is ordinarily obtained by scouring deerskins after tanning in oil, but which, when it is not convenient to obtain in this manner, may be produced as a liquor having the same character obtained by the cutting of oil with a suitable alkali.

In treating leather with the 'fat liquor,' it is *desirable to heat* the latter *to or near the boiling-point*, and it is *preferred* to use the same in connection with other ingredients. Thus, for instance, there may be added to each ten gallons of such heated fat liquor eight ounces of sal soda, twelve ounces common salt, one pint of soft soap or an equivalent quantity of hard soap, and four ounces of Venetian red, such ingredients to be well stirred and mixed with the fat liquor.

"This forms a good treating mixture or compound, and, when made in the foregoing quantity, will suffice for five or six dozen skins; but, of course, such quantity may be more or less varied, as may also the proportions of the ingredients, and the Venetian red, or other coloring matter, *be modified or omitted as desired*.

"To effect the treatment hereinbefore referred to, of the bark-

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tanned lamb or sheep skin, the same should be *well dipped in* or saturated with the *fat liquor* or *compound* of which fat liquor is the base. This may be done by laying the skin to be treated on a table or other suitable surface and rubbing the *fat liquor* or *compound* on or into both sides of the skin, using for the purpose a horse or other suitable brush or rubber, by which it can be worked into the skin, that is afterward hung out to dry, and subsequently 'staked,' when the character of said skin will be found entirely changed from harshness to softness, and other respects, thereby adapting it to the manufacture of gloves of the description previously named, and to a variety of other purposes for which said skin was not suitable prior to the treatment of it I have herein described."

The claim was thus:

"What is here claimed and desired to be secured by letters patent is:

"1. The employment of *fat liquor* in the treatment of leather substantially as specified.

"2. The process, substantially as herein described, of treating bark-tanned lamb or sheep skin by means of a *compound* composed and applied essentially as specified."

Upon *this reissue* Russell sued Klein as an infringer. His allegation was that bark-tanned leather before his treatment of it was harsh, "squeaky," and unsuitable for gloves; but that by his process, which, as he alleged, included *heating* the fat liquor, the "squeak" was removed, and the leather rendered soft, pliable, and suitable for a fine glove; that the treatment costing little greatly enhanced the value of the leather, and furnished a cheaper material for gloves than any other of the same quality and value.

The plaintiff's charge of infringement was wholly confined to the use of his process, including heat; and there was no allegation that the defendant had violated the plaintiff's rights by using fat liquor without heating it.

The defense was want of novelty. The case was heard before the district judge, sitting on the circuit. Numerous witnesses in behalf of the defendant swore that the application of fat liquor to leather, for the purpose of making it soft and pliable, had been known and in more or less use for many years; though they did not swear clearly that the application of fat liquor in a *heated* state with the effects which, in *that* state, it produced had been thus known or in use; and there was no proof by them of any use of fat liquor since the plaintiff's process had been patented otherwise.

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than by heating the ingredients. Nor did they all swear so fully that the application and value of it was known in regard to *bark-tanned* skins; a good deal of their testimony relating to *oil-tanned* skins; and some of it to tanning raw skins or skins imperfectly tanned. Some stated that fat liquor heated near the boiling-point and so applied would ruin the skins.

On the other hand, numerous witnesses of the plaintiff, glovers, at Gloversville, and elsewhere, more or less familiar with the glove business in the vicinity, and during the term of alleged prior knowledge spoken of by the witnesses of the defendant, testified that they had no knowledge of such leather as that which the plaintiff produced till about the date of his patent; that then the kind of leather produced by him with heated fat, oils, &c., went into extensive use, and that there was a great demand for it in the market. Some of these witnesses stated that heating the fat liquor to the boiling-point and allowing it to cool so as to make it capable of being worked in, did not destroy its properties. And the testimony of the witnesses of the defendant on cross-examination, tended perhaps to show that their knowledge of the means of softening leather at all by fat oils was very imperfect, and that what product was produced from bark-tanned skins was much inferior to that produced by the plaintiff; and was still affected with "squeak," and could not be used for the better sorts of glove; and that while they had experimented with heated fat oil, they had never brought any of their ideas to a practical use, and had abandoned them.

In the course of the trial, one *Uriel Case*, a witness of the defendant, having testified as to the manner in which skins were treated twenty years ago, which manner the defendant asserted was substantially like the patented process; and having testified further that he had treated skins in this manner for twenty years until after the issue of the plaintiff's patent, was asked by the plaintiff—

"Did the plaintiff come and forbid you going on?"

A question to which the defendant objected as immaterial, incompetent, and as calling for the declaration of the plaintiff. But the court allowed the question to be put; the defendant excepting. The witness stated that the plaintiff did not forbid him, but asked him, "Are you not interfering with my patent?" and that he, the witness, "might have told him that he had a way of his own of fixing bark-tanned skins," "that he did not remember having said anything about its being an old thing, or having been done so twenty years ago."

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So too, one *Place*, a witness of the defendant, having disclosed on cross-examination the facts, that he was a glover at Gloversville, in partnership with his brother, and that the plaintiff in the present case had sued *him* and his said brother some time before for an infringement of this same patent; that he, the witness, was now present, as his brother also was, without any payment of witness fees, as a witness for the defendant; that his brother had given him a paper in reference to the expenses of this suit; that he, the witness, had copied it and given it back to his brother, and had not seen it since—was asked by the plaintiff to state the substance of that paper. This was objected to by the defendant: 1st. Upon the ground that the statement of the witness was not the best evidence. 2d. Because no foundation had been laid for the production of the secondary evidence of the contents of the papers in question; and 3d. Because the testimony would be immaterial and incompetent. But the court held the question admissible, the defendant excepting. The witness answered:

"It was merely in substance to defend the manufacturing interests against Russell's patent. I didn't know who signed it."

The defendant having given evidence of the use of fat liquor upon oil-tanned skins for many years prior to plaintiff's patent, which use, he asserted, was the same, substantially, as the patented process—and the plaintiff having given evidence that the oil-tanned skins referred to in such testimony, were skins dressed "from the raw" in oil, and that the fat liquor used upon them was a part of, or in aid of, the oil-dressing process—and the plaintiff asserting that the use of the fat liquor in the process of oil-tanning, was essentially different from the patented process, that in oil-dressing, as it is termed, the fat liquor was used in connection with oil for the purpose of *tanning* the pelt, or, in other words, of *converting it into leather from the raw state*, while in the patented process the fat liquor was applied to a skin *already tanned*, and for the purpose of softening and adding new properties to it—called a witness, one Dr. Porter, who stated that he was a physician and chemist, and had examined the patent of Russell and the specifications, and had made tests and experiments in relation to the fat liquor and the process therein described. The plaintiff then asked him:

"Will you state whether the effect of fat liquor applied to oil-tanned and bark-tanned skins is the same?"

The defendant objected to the question "as immaterial, the purpose for which the process is used being immaterial, if the process

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is the same;" but the court allowed the question to be put. The witness answered "that the general effect was the same, but that the combination by the fat liquor with the different skins produced compounds essentially different."

The record, which set out the substance of the evidence, proceeded:

"The evidence here closed, and the foregoing comprised the substance of all the evidence given *relative to the alleged prior use of the process mentioned in the patent, and the novelty and usefulness, character and effect, of the alleged invention of plaintiff;* and thereupon the counsel for the defendant insisted before the said judge that the said several matters so produced and given in evidence as aforesaid were sufficient, and ought to be allowed as decisive evidence to entitle the defendant to a verdict, and requested the said judge to direct the said jury to find a verdict for the defendant."

The judge refused so to direct the jury, and proceeded to charge; charging among other things—

"That, taking the reissued patent as the basis of the plaintiff's claim, the true construction of the first claim is the employment of fat liquor generally in the state in which it comes from the mills, in the treatment of leather substantially as described; that this claim covered the employment of fat liquor in its pure and simple state.

"That the second claim covered the compound substantially as described in the specification, and that the heating of the liquor was an essential portion of the patented process under this claim.

"That specifications are not addressed to men entirely ignorant of the manufacture to which the specification relates, but to persons skilled in the art to which it appertains; that if, upon reading this specification, parties skilled in the art of dressing skins would know that this heating was for the purpose of making this compound with the fat liquor or for some other purpose, and that it would not do to apply the fat liquor at or near the boiling-point, because it would destroy the leather, such parties would not be misled by it, and therefore it would not be a fatal defect; but that, if persons skilled in the art, in attempting to put the plaintiff's invention in practice under this specification, would ordinarily apply the liquor to the skins used while it was at or near the boiling-point, and thus destroy them, then, of course, this specification was bad.

"That the jury were to consider the claim of the plaintiff as embracing two distinct and independent things; that the plaintiff

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had a right, if he was the first and original inventor of the use of fat liquor, in its simple and pure state, in this process, to secure that to himself pure and simple, and to hold as an infringer any one who used it without adding the other ingredients that went to make up the compound specified; that he had a right to secure the use of the fat liquor and the other ingredients also, but that the difficulty was, so far as this case was concerned, that the party having embraced within his claim the use of fat liquor in its pure and simple state, the question of heat or of the use of the compound was not very important to the interests of the parties, because, if the party claimed in his patent what was not new, or a substantial or material part of which was not new, the patent was void.

"That, if the jury were satisfied that this process of employing fat liquor in the treatment of leather, as substantially described in the patent, was known, that the process had been perfected, and had been used prior to this time of the plaintiff's invention, and that the persons who used the process had an intelligent comprehension of its character and the effect produced, the patent would be void; and that, upon the question of the validity of the patent, they were to look to the proof in regard to the use of fat liquor, substantially in the manner described when fat liquor alone is used, unconnected with the other ingredients constituting the compound, which is covered by the second claim in the patent; that, if the jury should find that this process had been used prior to plaintiff's alleged invention by other persons, as stated and claimed here, that the persons who used the process were aware of the object and character of it, observed and comprehended the beneficial results produced by its use, then the patent would be void upon the ground of want of novelty, although some circumstances might have induced them to abandon temporarily the actual practice of the invention, or the use of the process.

"That if they came to the conclusion that the process claimed in the first specification, that is the fat liquor had been so used substantially as described in the specification before this invention, that was the end of the case.

"But if they should come to the conclusion, upon the other hand, that all these other experiments were failures and were abandoned, then they would come to the question of infringement.

. "That the proof in regard to the quality and character of leather produced and the knowledge of it at Gloversville and vicinity, and the want of knowledge of it, was proper for the consideration of the jury, in connection with the question of whether these experiments were failures; whether this process was perfected and used;

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or whether the experiments and trials never reached the point of invention and were consequently abandoned. But it was not a question whether the result of the use of the process was as perfect at the time as it is now. It was a question whether, substantially, the same process was used."

The PLAINTIFF's counsel then requested the judge to charge the jury,

"That the application of heat to the liquor, and the use of liquor, as described, while in a heated state, are essential parts of the invention or discovery; but it is not, by necessary construction, required by the patent that the liquor should be applied to the skins at or near the boiling heat."

The judge declined to thus charge, on the ground that, under the first claim of the patent, neither the heating of the fat liquor nor the application or use of it, in a heated state, was an essential portion of the process.

The DEFENDANT's counsel then requested the judge to charge,

"1st. That the invention, as described in the patent of February, 1870, is the treatment of bark-tanned sheep and lamb skins by the employment of fat liquor, and if such treatment was known to others, and more than two years before the plaintiff applied for his patent, his patent is void."

Refused.

"2d. That the proper construction of the patent is that the fat liquor should be applied at or near the boiling-point, and if the application of fat liquor at such temperature to leather is injurious and pernicious the patent is void for want of utility."

Refused in the form put, but modified and given thus:

"The proper construction of the second claim of the patent, so far as it relates to the application of heat, is that the compound composed of fat liquor and the other ingredients required, should be applied at or near the boiling-point, *under the common knowledge of persons skilled in the art of treating this leather*, to procure softness and pliability, [?*] would make them wait until it was partially cooled before its application, and if the application of fat liquor at such a temperature to leather as is required by the specification under this qualification is injurious and pernicious the

* Something was left out here in the transcript. In the syllabus I have assumed that it was the words, "and in reference to the fact whether such knowledge," &c.

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patent is void for want of utility, and the defendant entitled to a verdict."

"3d. That if the patent did not intend that the fat liquor be applied to leather when at or near the boiling-point, it is, in respect to the application of heat, void for ambiguity."

Refused for the reasons substantially appearing in the modification of the last preceding request.

"4th. That if cooling the fat liquor after boiling is an essential point of the plaintiff's process, then the patent is void for not indicating that such process of cooling is necessary or how it is to be accomplished."

Refused in the form put, but modified and given by adding thereto the words:

"Unless the common knowledge of persons skilled in the art of treating this leather to produce softness and pliability would make the operator wait until it was partially cooled before its application."

"5th. That the addition to the fat liquor of the other ingredients mentioned in the specifications is not patentable if such addition does not change the properties of the fat liquor, or its effect or usefulness, when applied to the purposes mentioned in the patent or specification."

Refused in the form put, but thus modified and given:

"The addition to the fat liquor of other ingredients mentioned in the specifications is not of itself patentable, if such addition does not change the properties of the fat liquor or its effect or usefulness, when applied to the purposes mentioned in the patent or specification, *or to other like purposes.*"

"6th. That the process of preparing leather by means of a compound, as claimed by the plaintiff, is not patentable, because the proportions of such compound are not fixed, but are in all respects indefinite and uncertain, and may be waived or omitted by the terms of the patent."

Refused.

"7th. That if fat liquor had been used substantially in the manner specified in the plaintiff's patent, for the purpose of rendering any kind of leather soft and supple, more than two years [before the plaintiff applied for a patent,] the plaintiff cannot recover, even though it had not been so used in dressing bark-tanned lamb or sheep skins."

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Refused. The defendant then modified his request, by substituting "used before the plaintiff's invention" for "before the plaintiff applied for a patent," and thereupon the court charged,

"That the application of an old invention or an old machine to produce a new result, because it is applied to a different material, is not an invention, and the question of novelty is to be determined in the same way. That under the first claim of the plaintiff's, if this particular process was used for the purpose of softening leather, it is not material that it was bark-tanned sheep or lamb skins, if it be used as a process for that purpose."

"8th. That if the object of plaintiff's process was to substitute a less valuable article for that commonly known as 'dogskin,' and to impose upon the public by representing gloves made of softened sheep and lamb skins as dogskin gloves, the patent is void for fraud, and plaintiff cannot recover."

Refused, and the jury thus charged:

"If the process patented cannot be made useful for any honest purpose, and can be used only for perpetrating a fraud upon the public, and is therefore not useful, but pernicious, the plaintiff cannot recover."

"9th. That if anything claimed by the plaintiff in his patent, as used, was in fact old, the entire patent was void, and plaintiff could not recover."

Refused, except as had already been charged.

"10th. That the patent could not be sustained in the matter of the mere degree of heat, if the principle of applying heat to any extent is an old process."

Refused, except as had already been charged.

The jury found for the plaintiff.

On a motion made for a new trial, (the circuit judge, Woodruff, J., now sitting,) that learned justice was of opinion that there was no sufficient reason for disturbing the verdict. He said:

"The conflict of evidence upon the questions of fact was great, and made it a very proper case for submission to the jury. The impression on my own mind, after a careful examination of the testimony, is that the verdict is right, and the plaintiff is in fact the inventor of a new and useful process secured to him by his patent, and that the defendant is a willful and deliberate infringer of his rights."

Adverting to the construction of the patent, given by the learned

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district judge, he observed that it differed from a construction which he had himself put upon it on the trial on the circuit of another case by this same plaintiff, against another defendant, on the same patent, (*Russell v. Place*,) and where he instructed the jury that "the use of heat in the treatment of skins was an essential part of the patented process." The learned justice continued:

"But this instruction was not excepted to by the defendant, and he is not, as a matter of right, entitled to question the correctness of the charge to the jury on that point. In that particular, the question on a motion for a new trial is not simply whether the instruction was correct. If it appeared to me to be erroneous and yet it was clear that it worked no injustice to the defendant, it would be no reason for granting a new trial."

The exceptions to the evidence he considered were not well taken; independently of which the evidence led to nothing. And on the principal questions, the learned circuit judge considering, as already said, that the instructions of the court to the jury were, "at any rate, as favorable to the defendant as he had a right to require, and that the special instructions sought were charged as fully as the law would allow," denied the motion for a new trial. The case was now here in this position.

Mr. Matthew Hale, with whom was Mr. J. M. Dudley, for the plaintiff in error:

I. *The court erred in not directing the jury to find a verdict for the defendant.* 1. The suit was upon the reissued letters. But those letters were void, because they were not granted for the *same invention* as that embodied in the original letters patent.

2. The original patent had but one claim, substantially the *same* as the second claim in the reissued patent. This was for the treatment of "bark-tanned lamb and sheep skins" (not leather) with the same compound as in the reissue. The patentee stated in his original specification that it is "a full, clear, and exact description" of the invention. That "his invention consists in a novel treatment of what is known as 'bark-tanned lamb and sheep skins.'" That "the process" which he adopted and which "constituted his invention was as follows;"—here stating the ingredients of the compound and proportions, substantially as stated in the reissue, and describing only the mode of applying the compound to the skin, of crushing it into the skin, as described in the reissue, closing with the claim stated.

In the comparison it will be seen that the original claimed only

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the treatment of bark-tanned lamb and sheep skins with the specific compound, brushed or rubbed on, neither describing, suggesting, nor indicating the treatment of leather generally at all, nor such skins with fat liquor alone without said ingredients, nor the saturating by dipping. Upon the face of the two patents the old was for treatment with the *compound* alone, and the reissue is primarily for treatment with *simple fat liquor* alone, stating only that the patentee "*preferred* to use the same in connection with other ingredients;" and, after describing the compound, stating that "this forms a good treating mixture or compound," and closing with the second claim. It is simply for such treatment with simple fat liquor as it comes from the mill, (which is in no way indicated in the original,) interpolated with the sole treatment and sole claim specified in the original, which is now suggested only as a "*preferable*" way, and secondary to that of fat liquor alone.

3. Another view exists having the same result.* The original letters were for the use of heated fat liquor, and the reissue for the use of fat liquor generally; there being no doubt that fat liquor generally, or in a cold state, had long been used to soften leather; various additions—ammonia, oil, eggs, &c.—being occasionally, though far from always, made to improve its operation. If this was so, the reissue was equally void. Now, what in the reissue did the patentee claim as his discovery; the use of fat liquor, or the use of heated fat liquor?

(a) The invention is alleged to consist in a novel treatment of bark-tanned sheepskins, by which treatment they are rendered soft and free, and suitable to be manufactured into dogskin gloves. This is the result or effect, merely, and gives no light as to the process.

(b) The "*principal feature of the invention*" consists in the employment of fat liquor, obtained from the scouring of deerskins, or manufactured by a process described. The employment of fat liquor, hot or cold, strong or weak, natural or manufactured, is the principal feature. So long as fat liquor in any condition is used, the principal feature is preserved.

(c) In treating the leather with the fat liquor, it is "*desirable*" to heat the liquor, and it is "*preferred*" to use the same in connection with other ingredients, to wit, the soda, the salt, and soap, as specified.

The words "*desirable*" and "*preferred*" are used to express the

*This view was taken by the Circuit Court for the Northern District of New York in *Russell v. Dodge*.

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same idea, and each is used in contrast with essential or necessary; the meaning is this: "It is desirable to use the liquor heated, that is, the effect will be produced the more speedily, or with less trouble, or with less expense, but it is not necessary to heat the liquor, and to use the liquor in connection with the other ingredients is the preferable way, but it is not the only way. You may still accomplish the purpose, by using the liquor without the other ingredients and without its being heated."

"This forms," the statement adds, "a good treating mixture or compound." This, again, is an indication of a preference, but not of a necessity—a *good* treating mixture.

And again, "To effect the treatment . . . the skin should be . . . saturated with the fat liquor, or compound of which fat liquor is the base." The fat liquor, without reference to its state or condition, or the compound, is here stated as the essential element, and the same expressions are again used in describing the manner in which the liquor shall be applied. It is not required that the liquor shall be heated. After thus describing his process, the patentee sums up his claim under the two heads already stated.

It is the settled rule in this country that the patent and the specification are to be construed together, and that the specification may control the general terms of the patent. *Curtis*, § 221. A reference to the claim gives the precise information required of the essentials of the patent, to wit :

1st. "The employment of fat liquor in the treatment of leather substantially as specified," making no distinction between its employment when cold or when heated; and 2d, the process of treating the skins by means of a compound composed essentially as specified.

Now this reissue is, in this respect, quite different from the original patent. In describing his process, the patentee *there* says :

"I take of fat liquor obtained in scouring deerskins, after tanning in oil, say ten gallons, and warm the same by heating it to or near the boiling-point. I then add to such heated fat liquor eight ounces of sal soda," &c.

And his claim is for "the process substantially as herein described, . . . by means of a compound composed and applied essentially as specified." In this description the heating of the fat liquor is not merely "desirable" or to be "preferred," it is an essential element of the process. But this specification the patentee amends by making his claim on the reissue reach the liquor itself, whether cold or hot, and making it reach the liquor whether employed as a

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compound or alone. He abandons his original claim, except so far as it is redescribed in the reissued patent.

The authorities show that the words "desirable" and "preferred" are not essential parts of the description of the article patented. *Booth v. Kennard*, 1 Hurlstone & Norman, 527; *Stevens v. Keating*, 2 Webster's Patent Cases, 172; *Curtis*, § 258. The patentee may have intended to take a patent for use of heated fat liquor, but he has failed to express it in his description and specification.

II. The court erred further in not complying with our requests for instructions. Let us examine them:

1st request. The court refused to charge that the invention claimed by the plaintiff below, in his reissued patent, was the treatment of bark-tanned sheep and lamb skins by the employment of fat liquor; and that if such treatment was known to others, and more than two years before the plaintiff applied for his patent, his patent was void, and the defendant entitled to a verdict.

The construction of the patent, as indicating only the use of *fat liquor* in dressing leather, whether hot or cold, alone or with other ingredients, as the alleged invention of the patentee, has already been shown to be the true one. Indeed, the patentee having, in surrendering his original patent and procuring the reissue, necessarily sworn that the original patent was *inoperative and invalid* by reason of a defective or insufficient specification, and the original patent having described a compound precisely like that recommended in the reissue, and indicated much more clearly than the reissue, that the application of heat was an essential element in this invention, he is now estopped from asserting that the same identical thing recommended in the specification and second claim of the reissue is valid and operative. *Moffitt v. Gaar*, 1 Fisher, 613. Unless the defendant in error was the *inventor* of the use of *fat liquor* for the purpose indicated, he took nothing by the reissue.

The second branch of the request, that knowledge of his treatment by others more than two years before *plaintiff applied for his patent* rendered the patent void, was also correct. Act of 1836, § 15; Act of 1839, § 7; 16 Stat. at Large, 208, § 61.

The charge of the court had limited the effect of knowledge by others to two years before the *alleged invention*, which was erroneous.

2d, 3d, and 4th requests. The court below also erred in refusing these three requests to charge in relation to the construction of the patent, so far as it related to the application of heat, and in modifying the instructions requested as it did.

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The patent recommended that the fat liquor be heated "to or near the boiling-point." The natural inference was that it was to be applied in that condition. If applied at such temperature, there was evidence that it would be *destructive* to the leather. But the judge refused to instruct the jury that the patent was void for want of utility, if they believed this evidence, except with a modification, which really left the construction of the specification in the patent to the jury.

We insist (under the third and fourth requests) that the specification in the patent either required the liquor to be applied at or near boiling-heat, or else utterly failed to specify at what heat it should be applied, and that for this reason the patent was void in respect to the application of heat. *Tyler v. Boston*, 7 Wallace, 327.

5th request. The court erred in refusing to charge as here requested, with reference to the patentability of the addition to the fat liquor of the other ingredients mentioned in the specifications, and in modifying the request by adding thereto the words "or other like purposes." The "purposes" of the process are clearly set forth in the patent. They were to remove the hardness and stiffness of bark-tanned skins. The evidence was that the other ingredients named in the patent did not change the properties of "fat liquor," which is simply *oil cut with alkali*.

The defendant was entitled to a charge that if the ingredients named when added did not change the properties of fat liquor, or its effect or usefulness, when applied to the *purposes mentioned in the patent or specification*, such addition was not patentable. The words "or other like purposes," added by the court, left the jury to *conjecture* that, for *some other* purpose than making leather soft and pliable, the addition of these ingredients might change the effect of the fat liquor and be patentable.

6th request. The court erred in refusing to charge that the process of preparing leather by means of a compound, as claimed by plaintiff, was not patentable, because the proportions were not fixed, but were indefinite and uncertain, and may be waived or omitted by the terms of the patent.

By referring to the specification in the patent, it will be seen that this request should have been complied with. "It is *preferred* to use the same in connection with other ingredients." Then after giving certain proportions, it goes on to say, "but of course such quantity may be more or less varied, as may also the proportions of the ingredients, and the Venetian red or other coloring matter, *be modified or omitted, as desired.*" In other words, everything was left to the taste and fancy of the user, who was at liberty,

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under this patent, to use any or all these ingredients in such proportions or manner as he pleased, or to omit them altogether. The description of the pretended "compound" was too vague and uncertain to sustain a patent. *Tyler v. Boston*, 7 Wallace, 327; *Wood v. Underhill*, 5 Howard, 1; *Parker v. Stiles*, 5 McLean, 54.

7th request. The court erred in refusing to charge the jury that if fat liquor had been used substantially in the manner specified in the plaintiff's patent, for the purpose of rendering *any kind* of leather soft and supple, more than two years before plaintiff applied for a patent, the plaintiff below could not recover, even though it had not been so used in dressing bark-tanned lamb or sheep skins.

This request was conceded by the learned judge to be correct in principle, so far as it referred to the use of the process for the purpose of softening any leather, but he refused to charge that such prior use for two years before the plaintiff below *applied for his patent* was sufficient.

The fact that the chemical combination of fat liquor with bark-tanned skins may be different from its combination with oil-dressed leather, as asserted by Dr. Porter, does not change the rule, since he states, and all agree, that the general effect is the same upon all skins or leather, namely, to make them soft and pliable.

9th request. The court erred in refusing to charge, when requested, that if anything claimed by the plaintiff in his patent as new was in fact old, the entire patent was void, and the plaintiff could not recover.

10th request. The court below erred in refusing to charge the jury that the patent could not be sustained in the matter of the mere *degree* of heat, if the principle of applying heat to any extent was an old process.

Witnesses had testified that they had used warm fat liquor for the purpose mentioned in the patent, but none testified to having heated it "to or near the boiling point," as recommended in the specification of the patent. The request was, in effect, that the raising the heat of the fat liquor to the *boiling point* did not of itself constitute an invention which was the subject of a patent, and the defendant below was entitled to this instruction. *Brooks v. Bicknell*, 3 McLean, 262; *McCormick v. Manny*, 6 Id., 557; *Everson v. Ricard*, Law's Digest, 181.

III. The reasons for our exceptions to evidence appear in the exceptions themselves.

Argument in support of the reissue.

Mr. H. E. Smith, contra :

I. The point that the reissue is not for the same invention is not well taken.

1. It was not made in the court below, and is not, therefore, now available to the plaintiff in error. The general request to direct a verdict for defendant did not call the attention of the court to this point. The Supreme Court will not express an opinion upon a matter of defense not brought to the consideration of the court below. *Bell v. Bruen*, 1 Howard, 169.

2. The original specification did embrace warm fat liquor as the principal thing in his invention; but it was defective in omitting to make the proper claim.

3. Variations from the description in the original specification do not necessarily imply that the reissue is for a new or different invention, for the right to surrender and obtain a new patent is given for the purpose of enabling the patentee to give a more perfect description, and cover what he has invented; and the second necessarily varies from the first.

And the defect entitling the patentee to a reissue may be in the specification or claim, or both. *O'Reilly v. Morse*, 15 Howard, 112; *Battin v. Taggart*, 17 Id., 84; *Carver v. Braintree Manufacturing Co.*, 2 Story, 439, 440.

4. A reissued patent is presumed to be for the same invention as that included in the original patent. But such inference or presumption in respect to identity is open to be contradicted by proper evidence, which should be submitted to the jury. *Stimpson v. Westchester Railroad*, 4 Howard, 404; *Allen v. Blunt*, 2 Woodbury & Minot, 139.

The argument of the plaintiff in error on his exceptions to the judge's refusal to direct a verdict for the defendant raises the question of—

The construction of the patent. But if any error occurred in the construction of the patent in the court below, it was in favor of the plaintiff in error, and he did not except to it or ask a different construction. He cannot now be heard to complain. Still, as in the litigations under this patent, there has occurred a disagreement among the judges in the Circuit Court, in regard to the construction of the specification in an important particular, and as there are other suits pending which involve the same question, it is desirable to have an authoritative construction, and we consent to argue the question.

Our construction is that the patent covers two things: 1. A novel treatment of bark-tanned sheep or lamb skins, by heated fat liquor,

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substantially as described in the specification; and 2, the treatment of such skins with a heated compound, composed and applied substantially as specified.

The other construction is the one given by the court below and now adopted by the plaintiff in error, that the specification embraces two claims:

1. The use of fat liquor, pure and simple, as it comes from the mills, substantially as described in the specification; and—

2. The compound substantially as described, and that the heating of the liquor is an essential portion of the process under this claim.

The point of difference is, the *heating* of the fat liquor under the first claim, when it is used without the other ingredients; the patentee asserting that by a fair construction of the patent, it covers only heated fat liquor, while on the other side it is asserted that it covers the use of *cold* fat liquor as it comes from the mills.

The patent should receive the construction given to it by the patentee, for the following, among other reasons:

1. If it will bear either construction, it should receive the one most favorable to the patentee; that which will be most likely to protect the invention. The *intention* of the patentee is to be sought in giving construction to the language; and for this purpose particular phrases must not be singled out, but the whole specification and claim must be taken together. *Whitney v. Emmett*, Baldwin, 303, 315; *Ames v. Howard*, 1 Sumner, 482, 485; *Page v. Ferry*, 1 Fisher, 298, 302.

2. If it appear with reasonable certainty, either from the words used or by necessary implication, in what the invention consists, it will be adjudged sufficient, and the rights of the patentee will be protected, however imperfectly or inartificially he may have expressed himself.

In construing the claim it is proper to look at the original patent, and in the original specification it is clear that the patentee intended the use of fat liquor in a *warm* state only. *Johnson v. Root*, 1 Fisher, 351, 355.

Now a reissue must be for the *same invention*. It is not to be presumed that the patentee intended to embrace in the reissue what he had not invented or described in the original, and thus destroy his patent.

The power and duty of granting a new patent for the original invention, upon a surrender of the old, is intrusted to the Commissioner of Patents, and his decision is not re-examinable by the courts, unless it is apparent upon the face of the patent that he has

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exceeded his authority, or unless there is a clear repugnancy between the old and the new patent, or unless the new has been obtained by fraud or collusion between the Commissioner and the patentee. The presumption upon all these points is in favor of the regularity and validity of the reissue. *Potter v. Holland*, 4 Blatchford, 238, 242; *Battin v. Taggart*, 17 Howard, 74, 84; *O'Reilly v. Morse*, 15 Id., 62, 112; *Hussey v. McCormick*, 1 Fisher, 509, 515.

By the well-settled rules of construction already referred to in this discussion, the court will not give a construction that will create a repugnancy between the old and the new, and thus invalidate the patent, if the language of the specification and claim, taken together, and in connection with such extraneous facts as may aid in disclosing the intention of the patentee, will admit of another construction.

Independently of all this, the language and structure of the specification require the construction set up by the patentee.

The specification commences by stating in what the invention consists, in these words: "A novel treatment of what is known 'as bark-tanned lamb or sheep skins,' which in the bark-tanned state is too hard and stiff for glove-making, but when subjected to this treatment is rendered suitable for gloves." Stated generally, then, the invention consists of a *novel treatment* of a certain kind of skin, a *process* or *processes*; and the manner and character of this treatment or process is to be thereafter described.

The specification then proceeds to describe the *novel treatment* or *process* constituting the invention, and begins by saying that the "*principal feature*" of the invention consists of the employment of fat liquor. It does not say that the *whole* invention, or the whole of *any* or *either* *claim* consists in the mere employment of fat liquor; but that this is a *principal* feature. The expression "*principal* feature" implies that there are other features. It is pertinent to observe also, in view of certain criticisms upon the specification to be noticed hereafter, that fat liquor as the *principal* feature, applies to the compound or *second* claim as well and as fully as to the *first* claim. As, therefore, the fat liquor is to be heated when used in the compound, no inference against its heating when used alone can be legitimately drawn from the statement that the employment of fat liquor constitutes the *principal* feature of the invention. If it intends *heated* fat liquor in one case, as is conceded, it must in the other also.

The specification then goes on to describe further the "*novel treatment*," and the *other* features of the invention, and says: "In treating leather," that is, the leather before-mentioned, "bark-

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tanned lamb or sheep skins," "with fat liquor, it is desirable to heat the latter to or near the boiling-point, and it is preferred to use the same," *i.e.*, fat liquor *heated*, "in connection with other ingredients." This plainly says, "in treating the leather with *fat liquor*," not with the compound, "it is desirable to heat the latter," *i.e.*, the *fat liquor alone*, "to or near the boiling-point." It will be observed that the heating of the liquor is mentioned before a word is said about other ingredients; and there can be no doubt that the patentee intended the heating of the fat liquor as a part of his process.

In prescribing the compound, the specification says: "There may be added to each ten gallons of such *heated fat liquor*," thus showing clearly that the patentee intended *heated* fat liquor, both when used alone and as the base of the compound.

Afterwards, in speaking of the treatment of the skin, the specification says: "The same should be well dipped in or saturated with the *fat liquor*, or *compound* of which the fat liquor is the base."

While this includes the treatment of the skins with the fat liquor alone, and also with the compound, of which *heated* fat liquor is the base, it does not repeat the word "heated;" hence the omission of the word "heated" when applied to the immersion of skins in the *fat liquor alone*, does not afford a presumption that the patentee did not intend *heated* fat liquor under the first claim. On the contrary, it affords a strong presumption of the reverse.

The construction asked by the patentee is confirmed by reference to the formal claim at the close of the specification. Read in connection with and construed in the light of the whole specification, it is twofold: 1. "The employment of fat liquor in the treatment of leather, *substantially as specified*"—that is to say, *heated* and applied to the skin substantially as specified. 2. The process, "substantially as herein described, of treating bark-tanned lamb or sheep skins, by means of a compound composed and applied essentially as specified"—that is to say, a *heated* compound composed and applied essentially and substantially as specified.

It is said that the words "*desirable*" and "*preferred*" in the specification are used to express the same idea, and each used in contrast with *essential* or *necessary*. This is a mistake.

The word "*desirable*" applies to the use of the fat liquor, whether alone or in the compound, and refers to the *degree* of heat and not to the *fact of heating*. The patentee does not mean to say that it is not *essential* or *necessary* to *heat* the fat liquor, but that it is not *essential* to heat it *up to or near the boiling-point*. The

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language is not the most apt that might have been employed to express the intention, but reasonably plain nevertheless. The draughtsman evidently assumed the *fact* of heating, and sought to describe the temperature without limiting it to an exact degree. This view is strengthened by reference to the original specification, where the expression is "*warm the same by heating to or near the boiling-point.*" Here there is no question about the *fact* of heating being essential; and the formula, substantially, was transferred to the reissued specification, and there applied to both claims. If, from the language employed, there is no question about the necessity of heating under the old patent, and none when applied to the compound under the new, why should the same language receive a different construction when applied to fat liquor alone?

The word "*preferred*" applies to the compound, and means simply that the inventor prefers it to the use of the heated fat liquor alone, and hence he describes and patents it.

This word may be said to be used in contrast with *essential* or *necessary*, in reference to producing the desired result; that is to say, such result may be produced by the heated fat liquor alone, and that is claimed and patented; but the inventor prefers the compound, and that is claimed and patented also.

II. *As to the requests for instructions.*

1. The first request does not correctly or fully describe the invention. The employment of fat liquor, merely, is not the whole of the invention. It is the employment of fat liquor in the *condition* and *manner* described in the specification. The request erroneously assumes that a knowledge by others of the thing patented, more than two years before *application for the patent*, renders it void. If a prayer for instruction be not correct *in its very terms*, it is not error to refuse it. The charge to the jury covered the ground of this request, and embraced all the defendant below had a right to ask upon the point involved.

2. The second request was properly refused, and the modification was correct. The court had already charged on this point, and the charge and the modification of the request under consideration, correctly present the law applicable, and were sufficiently favorable to the defendant below. Whether the specification is sufficient, within this rule of law, is a question of fact for the jury; and in the case at bar it was properly submitted to the jury. *Judson v. Moore*, 1 Fisher, 544, 547; *Davis v. Palmer*, 2 Brocken-

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brough, 298, 308; *Wood v. Underhill*, 5 Howard, 1, 4; *Battin v. Taggert*, 17 Id., 74, 85.

3. The refusal to comply with the third request was correct, for the reasons given in considering the second request, and also on grounds hereafter stated in considering the sixth request.

4. It would have been erroneous to charge as requested by the fourth request without the modification. The question here involved is substantially the same as that spoken of in considering the last two requests, and also hereinafter spoken of in considering the sixth request.

5. In reply to the fifth request, the charge was in accordance with the request except in the addition of the words, "or to other like purposes." If the request without this addition was proper as far as it went, the addition was proper, unless the *mere purpose* or *application* of a contrivance or process is patentable, which will not be asserted. If the addition was *right*, the request without it was *wrong*. The patent was *prima facie* evidence of utility, and there was no conflicting evidence on this point. Hence, the request involved only an abstract question.

6. The sixth request presents one question only: "Is this claim void for uncertainty, because the specification does not prescribe exact and unvarying proportions in the ingredients of the compound?"

The formula given in the specification gives fixed and certain proportions in the compound, as a general rule. And the specification goes on to say that the proportions of the ingredients may be more or less varied, and the Venetian red or other coloring matter be modified or omitted, as desired. It evidently does not mean that all the ingredients may be omitted; for this part of the specification is treating of the *compound*, and if all the ingredients were omitted it would be no compound, but fat liquor, simply. The other ingredients may be varied, but the Venetian red or other ingredients may be omitted, if desired. A variety of colors are required in glove leather, and the use or omission of the coloring matter, as well as the kind to be used, would, it is obvious, depend upon the color of the leather desired in a particular case; hence; the impracticability of prescribing in the patent any exact and invariable rule for its use. If the patent fixed the exact and invariable proportions of the other ingredients, it would enable any one to produce the same results, and use the invention with impunity by a slight variation of the proportions, not affecting essentially the character of the compound. In this, as in other respects, the specification is addressed to persons "skilled in the art or

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science to which the invention appertains." Where the patentee gives a certain proportion as a general rule, which on the face of the specification seems generally applicable, the patent will be valid, though some small differences may be occasionally required. *Wood v. Underhill*, 5 Howard, 1; *Ryan v. Goodwin*, 3 Sumner, 514.

7. The seventh request referred to a prior use more than two years before *plaintiff's application for a patent*, and the court properly refused so to charge. The defendant then modified his request, and the court charged substantially as requested.

8. The eighth request is not insisted on in argument. It was purely abstract and speculative. The court was not bound to notice it at all, though it did notice it, and in a way which, so far as the defendant is concerned, is unexceptionable.

9. The charge contains just what the ninth request requested. The judge was not bound to repeat himself.

10. The tenth request was to charge "that the patent could not be sustained in the matter of the mere degree of heat, if the principle of applying heat to any extent was an old process." So far as this point involves the question of novelty, the charge had fully covered the ground, and in accordance with the request. If it was intended by the request to elicit a ruling that a patent could not be sustained for a *mere degree of heat*, then it was, in that particular, abstract and speculative. The specification does not fix any exact degree of heat, and the plaintiff below did not ask to have his patent sustained on that ground.

III. *Exceptions to evidence.*

The question to *Uriel Case* was proper as introductory to the witness's statements at the interview, and as proof of the fact elicited by his further cross-examination, that when charged with an infringement of the patent, he made no pretense of prior knowledge, but claimed "a way of his own," &c., or, in other words, that he did not then infringe.

The question to *Place* was proper also, its object, obviously, having been to show a combination among the defendants' witnesses, including the witness under examination, to defeat the patent and share the expense, thus affecting their credibility.

The objection that it was not the best evidence is untenable. The question was upon a collateral matter arising incidentally in the progress of the trial, affecting merely the credit of the witness.

The witness did not know who signed the paper, and the evidence complained of being, therefore, harmless, error cannot be predicated of its admission.

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On the state of the case the question to *Dr. Porter* was proper also, for while it is true that the mere purpose or effect of a process is not patentable, it is equally true that the effect or result produced is always proper to be considered when a patent is on trial. Indeed, it is often most important in determining the questions of novelty and utility. The result, if greatly more beneficial than that produced by old contrivances, reflects back and tends to characterize the importance of the change. Our question to Dr. Porter tended to solve the question raised by the defendant's evidence, whether or not the patented process was or was not the application of an old principle or process to a new and analogous use. However, Dr. Porter's answer, if it was not harmless in itself, became harmless under the charge of the court in reply to the defendant's request.

Mr. Justice SWAYNE delivered the opinion of the court.

The action was for the infringement of a reissued patent. The plaintiff in error was the defendant in the court below. A verdict and judgment were rendered against him. In the progress of the trial he took numerous exceptions. We have considered them, and will proceed to dispose of the case.

There was no error in the refusal of the court to direct a verdict for the defendant. The evidence is fully set out in the record. It was well remarked by the circuit judge, in deciding the motion for a new trial, that "the conflict of evidence upon the questions of fact is very great, and made it a very proper case for submission to the jury." Where it is entirely clear that the plaintiff cannot recover, it is proper to give such a direction, but not otherwise.

It is insisted, in this connection, that the reissue is void, because it was not for the same invention as the original patent.

This point does not appear to have been taken in the court below, and, therefore, cannot be made here. No instruction was asked or given touching the subject. It is to be presumed, until the contrary is made to appear, that the Commissioner did his duty correctly in granting the reissued patent.

The question put to Uriel Case, and his answer, were within the proper limits of a cross-examination. *Johnston v. Jones*, 1 Black, 210.

The question to Place was proper, and his answer was not objected to. His answer as to his connection with the paper to which he referred also passed without objection. But it is insisted that it was error to require him to state its contents, no notice to produce it having been given. To this there are two answers: It was

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an incidental and collateral matter drawn out to test the temper and credibility of the witness. It in nowise affected the merits of the controversy between the parties. The witness stated that he did not know who signed the paper. The contents could not, therefore, have operated to the injury of the defendant.

The question to Porter involved the novelty, utility, and *modus operandi* of the alleged invention of the plaintiff, and the answer was competent evidence.

Elaborate instructions covering the entire case were given to the jury. None of them were excepted to by the defendant.

Numerous instructions were asked by his counsel. An exception was taken in relation to each one of them, and is assigned for error.

We shall refer to them as they are numbered in the record.

I. That the patent is for "the treatment of bark-tanned sheep and lamb skins, by the employment of fat liquor, and if the jury believe such treatment was known to others more than two years before the plaintiff applied for his patent, his patent is void." This instruction was properly refused. It stated inaccurately the rule of law which it involved. A patent relates back, where the question of novelty is in issue, to the date of the invention, and not to the time of the application for its issue. The jury had already been sufficiently instructed upon the subject. The instruction assumes that the reissue was for the use of fat liquor, without reference to the point whether it were hot or cold. This renders it necessary to construe the patent with a view to the solution of that question.

The original specification declared that the invention consisted "in a novel treatment of bark-tanned lamb or sheep skins." The patentee said: "The process I adopt, and which constitutes my invention, is as follows: I take of 'fat liquor,' obtained in scouring deerskins after tanning in oil, say ten gallons, and warm the same to or near the boiling point. I then add to such heated fat liquor eight ounces of sal soda, twelve ounces of common salt, one pint of soft soap, and four ounces of Venetian red, and stir and mix these several ingredients with the fat liquor." The claim is as follows: "What is here claimed, and desired to be secured by letters-patent, is the process substantially as herein described of treating bark-tanned lamb or sheep skins by means of a compound, and applied essentially as specified."

With this specification and claim, it was apprehended that the patent did not cover the use of heated fat liquor *alone*—which the patentee claimed as a part of his invention—but that it would be held to cover the use of such heated liquor only in combination with the ingredients specified. If so, the omission of any one,

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or all, of the ingredients would have given immunity to an infringer. To remedy this defect the reissue was procured. In the specification in that case the patentee says: "My invention consists in a novel treatment of what is known as bark-tanned lamb or sheep skin."

"The principal feature of my invention consists in the employment of what is known amongst tanners as fat liquor, which is ordinarily obtained by scouring deerskins, after tanning in oil, but which, when it is not convenient to obtain in this manner, may be produced as a liquor having the same character—obtained by the cutting of oil with a suitable alkali. In treating leather with the 'fat liquor,' it is desirable to heat the liquor to or near the boiling-point, and it is preferred to use the same in connection with other ingredients. Thus, for instance, there may be added to each ten gallons of such heated fat liquor, eight ounces sal soda, twelve ounces common salt, one pint of soft soap, or an equivalent quantity of hard soap, four ounces of Venetian red; such ingredients to be well stirred and mixed with the fat liquor."

The claims are as follows:

"1. The employment of fat liquor in the treatment of leather, substantially as specified.

"2. The process, substantially as herein described, of treating bark-tanned lamb or sheep skins by means of a compound composed and applied essentially as specified." The mode of application prescribed in both specifications is the same.

The first claim, it has been argued, is for the use of fat liquor generally, hot or cold. If it be for the former only, the patent may be valid; while, if for the latter, it may be too broad, and, therefore, void.

The counsel for the patentee insists that the claim is limited to fat liquor in a heated state. The subject is to be examined in the light of both specifications and of both sets of claims. The court should proceed in a liberal spirit, so as to sustain the patent and the construction claimed by the patentee himself, if this can be done consistently with the language which he has employed.

The original specification and claim were clearly confined to heated fat liquor. The law (act of 1836, § 13, 5 Stat. at Large, 122) required that the reissue should be for the same invention as the original patent. It is to be presumed the Commissioner did his duty. If the reissue be for fat liquor generally, it is for a thing then patented for the first time, and the patent involves a violation of the law.

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The second specification says: "The principal feature of the invention is the employment of 'fat liquor.'" It then proceeds to direct how the liquor shall be prepared. In doing this it is said "it is desirable to heat the liquor to or near the boiling-point."

This is the foundation of the first claim, which is for "the employment of fat liquor in the treatment of leather, *substantially as specified.*" The heated condition of the liquor is before distinctly specified, and if it be applied in any other state its condition will not be as specified, either exactly or substantially. After the words "boiling-point," the specification proceeds: "And it is preferred to use the same in connection with other ingredients. Thus, for instance, there may be added to each ten gallons of *heated* fat liquor," &c. The ingredients are then named. This is the ground of the second claim, to wit: "The process substantially as herein described of treating bark-tanned lamb or sheep skins by means of a compound composed and applied essentially as specified." Here *heated* fat liquor is clearly one of the constituents of the compound. A chemist proved on the trial that heat was an element essential, in a large degree, to the efficacy and utility of both the simple liquor and the compound, when so applied. We think the better opinion is, that the first claim was intended to cover, and does cover, only the use of heated liquor.

The first instruction might well have been refused for the reason, also, that it was too broad as to this point.

II. The next prayer and the action of the court are thus set forth in the bill of exceptions:

"2. The defendant's counsel also requested the said judge to charge that the proper construction of the patent is that the fat liquor should be applied at or near the boiling-point, and if the jury believe that the application of fat liquor at such a temperature to leather is injurious and pernicious, the patent is void for want of utility, and the defendant entitled to a verdict; but the said judge refused so to charge the jury, but modified the said request and instructed the jury that the proper construction of the second claim of the patent, so far as it relates to the application of heat, is that the compound, composed of fat liquor and the other ingredients required, should be applied at or near the boiling-point, under the common knowledge of persons skilled in the art of treating this leather, to procure softness and pliability, would make them wait until it was partially cooled before its application, and if the jury believe that the application of fat liquor at such a temperature to leather as is required by the specification under this quali-

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fication is injurious and pernicious, the patent is void for want of utility, and the defendant entitled to a verdict; and the counsel for defendant then and there duly excepted."

We think this ruling of the court was correct.

III and IV. These exceptions are sufficiently answered by what was said by the Circuit Court as to the second prayer.

V. This instruction was properly modified. The state of the evidence hardly justified the judge in giving any instruction upon the subject to which it related.

The remaining five exceptions may be grouped and disposed of together. Neither of them requires any special remark.

We are satisfied with the rulings of the learned judge who tried the case as to each and all of them.

We find nothing in the record of which the plaintiff in error has a right to complain.

JUDGMENT AFFIRMED.

Dissenting, Justices FIELD and HUNT.

PACKET COMPANY v. SICKLES.

(19 Wallace, 611.)

1. Whilst the right to plead the statutes of limitations is no more within the discretion of the court than other pleas, when the refusal of the court to permit that plea to be filed is based on the allegation that it is not filed within the time prescribed by the rules of practice adopted in that court, it is necessary that the party excepting to the refusal shall incorporate the rule in his bill of exceptions, or this court will presume that the court below construed correctly its own rules.
2. Such rules are indispensable to the dispatch of business and the orderly administration of justice, and it must be presumed that the court below is familiar with the construction and course of practice under them.
3. The rule of damages in actions at law for infringement of the rights of patentees has long been established in this court to be the customary price at which the patentee has licensed the use of his invention, where a sufficient number of licenses or sales have been made to establish a market value.
4. The reason for this rule is still stronger when the use of the patented invention has been with the consent of the patentee, expressed or implied, without any rate of compensation fixed by the parties.

ERROR to the Supreme Court of the District of Columbia.

This suit was part of a litigation of twenty-five years' standing, which was now in this court for the fourth time.

The controversy arose out of the use by the defendants below of an improvement in the steam-engine known as the Sickles cut-off, an apparatus for lifting and tripping the valves of steam-engines,

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and also an improved water reservoir and plunger, for which F. E. Sickles, one of the plaintiffs, had, on the 20th May, 1842, received a patent.

All the trials in the court below previous to the one under review had been founded on a special count, the substantial allegations of which were that after an experiment to ascertain the saving in fuel due to the use of the patented invention, the defendants would pay to the plaintiffs three-fourths of the value of said saving of fuel during the existence of the patent, if the vessel on which it was to be used should last so long. Very large savings were proved to the satisfaction of juries, and several heavy verdicts and judgments rendered, which were reversed on different grounds in this court. The last of these reversals was in the present case, and is reported in 5th Wallace, 580.

It was there held that this special contract, on which the case had always been previously tried, was void under the statute of frauds, because it was not to be performed within one year and was not in writing. This was in 1867, and the case being remanded, the plaintiffs, by leave of the court, filed, on 4th March, 1868, the following amendment to the declaration :

“The plaintiffs sue the defendants for money payable to the plaintiffs, for the use of a certain apparatus patented by one F. E. Sickles on the 20th day of May, 1842, for lifting and tripping the valves of steam-engines, and also an improved water reservoir and plunger.

“And the plaintiffs sue the defendant for money received by the defendant for the plaintiffs ; and the plaintiffs claim \$25,000.”

To this the defendants, on the 1st day of March, 1871, three years afterwards, without leave of the court, filed a plea of non-assumpsit, and two pleas of the statute of limitations. On motion of the plaintiffs the two latter pleas were stricken from the files, on the ground that not having been filed within time, *according to the rules of the court*, the court would, in furtherance of the ends of justice, refuse to permit them to stand as part of the issue to be tried.

The defendants excepted ; but whether their exception exhibited to this court in the full, clear, and regular way in which, according to immemorial practice, it was proper to exhibit it, the action of the court below, which they wanted to bring here, was not so clear. The bill of exceptions, signed by the judge and sealed, ran in this way ; the rule of court which it was said that the defendant had violated, not being incorporated into the exception, but appear-

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ing (just as it appears on the page of this volume) in a *foot note* on the page in the printed transcript; leaving it open, of course, to a question who put it on the record or transcript, though not the least question of that sort was made, at any time, in this case.

"Deposition of Thomas Worthington was read, and it was shown to the court that a copy of the amended declaration was served on the attorney of the defendant, but without the notice to plead required by the rule of court No. 15,* and was as follows: [The exception then set out the amended declaration in the words already above given.] Nor was any rule to plead laid in the case after the amended declaration. Therefore the court ordered that the second and third pleas be stricken out; to which ruling the defendant excepts and prays the court to sign, seal, and cause to be enrolled this its first bill of exceptions, which is done accordingly, this 2d day of March, 1871."

These pleas of the statute being struck out, the case was tried on the plea of non-assumpsit.

The plaintiff, under objection by the defendant, proved his special contract, how much fuel had been saved by the use of his apparatus, and how long the defendant used it. The defendant excepted to this proof.

The defendant gave evidence to show every sale made during the existence of the patent, of the license to use the patent on board of different boats; and that the patent fee charged to licensees under said sales, which were numerous, ranged from \$250 to \$1,500, but, on no occasion, exceeded the latter sum; and further, that the owners of the patent did not keep the patent-right off the market, but, on the contrary, availed of all opportunities offered of disposing of licenses to use the patent.

The defendant, in substance, asked the court to charge,

"That the measure of damages was the established rate for the license to use their invention, as ascertained by the sales made by plaintiff of such license to others."

The court refused thus to charge, and charged thus:

"In estimating the amount which the plaintiff is entitled to

* RULE 15. A notice to plead shall be subscribed to every declaration in the following form:

"The defendant is to plead hereto on or before the first special term of the court occurring twenty days after service hereof; otherwise judgment. P. Q., attorney for plaintiff."

Except this notice to plead, subscribed to the declaration, no rule to plead or demand of plea shall be necessary.

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recover, the jury will take into consideration the value of the use of this machine, as far as the proof enables them to ascertain its value from the sale of the machine itself, from the license of its use, from the capacity of the machine to economize the expenditure of fuel, in the expression of the power of the engine, and from any other testimony that they may find developed in the case bearing upon the value of its use; the conclusion of value not to be confined to the price of the patent when sold, the license for its use, or the value of its economies, but to be a deduction from all, under the rule of equity and justice between parties dealing with each other in contract, and where it is expected that both are to derive advantages from their dealings."

To the refusal and to the charge exceptions were taken.

The jury found a verdict of \$11,333 with interest, from the day when the suit was brought, December 11th, 1855, to the day when the verdict was rendered, March 15th, 1871.

The case was now here on exceptions; errors among others being assigned:

In striking out the pleas of the statute of limitations.

In admitting evidence to show the saving qualities of the Sickles apparatus, as compared with others, whose merits were not shown.

In refusing to instruct the jury as requested that, in an action for the use of a patented machine, the measure of damages is the license fee or what others pay for the same use about the same time.

And in charging the jury in respect of damages as it did.

Messrs. T. J. D. Fuller and W. D. Davidge, for the plaintiff in error; Messrs. J. H. Bradley and E. N. Dickerson, contra.

Mr. Justice MILLER delivered the opinion of the court.

The ruling of the court below, in striking out the two pleas of the statute of limitations, is the ground of the first exception and of one of the assignment of errors.

The rule of that court is not made a part of the bill of exceptions. What purports to be a rule on the general subject of notice to plead is put at the bottom of the page in a note, a mode of making up records on writs of error which is quite novel. What these rules are cannot be judicially noticed by this court, and we are much embarrassed as to the effect of the reference to those rules in the bill of exceptions. The right to plead the statute of limitations, like any other defense, does not depend on the pleasure or discretion of the court. And if the action of the court was rested

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solely on that ground we should have no hesitation in reversing it. But there are other considerations to be weighed. The right of a court to prescribe rules to regulate the time and manner of filing pleas is beyond question, if they are reasonable, and such rules are indispensable to the dispatch of business and the orderly administration of justice.

When in a bill of exceptions the court places its action on such rules, with the construction of which, and the course of practice under them, it must be familiar, it would seem that the party assigning error on such rulings should be bound to exhibit in his bill of exceptions so much of the rule or rules as affects the question. No little weight is added to these views by the fact that the defendants did not file their pleas until three years after the filing of the amended declaration, to which they were answers, and until the day before the case was tried by the jury. In addition to this, while it may be true that the amended declaration, as a general rule, is to be taken as the commencement of the suit, in reference to the defense of the statute, it may be doubted whether in this particular case, where, after years of fierce litigation, only a common count is added, which is intended to cover the same subject-matter, justice will be promoted by allowing this plea, which can only be valid by reason of the time elapsed pending the litigation. On the whole we do not think, as the case appears before us, that the exception is well taken.

The case went to trial on the plea of non-assumpsit to the amended declaration. Evidence was admitted, to which defendants excepted, proving the special contract, the value of the saving in fuel made by the use of the patented improvement, and the length of time it was in use by defendants. Evidence was also given by defendants that the plaintiffs had sold a great many licenses for the use of the patent on steamboats, that the patent fees were numerous, and ranged from \$250 to \$1,500 for the use of the patent during its existence, and that though they had produced evidence of all the sales made of licenses for the use of the patent on steamboats during its existence, the fee in no case exceeded the latter sum. Notwithstanding this testimony, which seems to have been uncontradicted, the verdict of the jury and the judgment of the court was for \$11,333, with interest from the date of the commencement of the suit.

The defendants in various forms prayed the court to instruct the jury that the measure of damages was the established rate for the license to use their invention, as ascertained by the sales made by plaintiffs of such license to others. If this was the true rule of

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estimating the damage the bill of exceptions shows that a sufficient number of such licenses, and the prices at which they were granted, were in evidence to enable the jury to apply the principle to the case before them.

And we are of opinion that this was the sound rule, and that in refusing the prayers for instruction based on it, as well as in admitting evidence of the saving of fuel and its value as affecting the amount of the verdict, the court below was in error. And the same error is to be found in the charge of the court to the jury on that subject.

In the case of *Seymour v. McCormick*, 16 Howard, 480, this court, on full consideration, and without dissent, laid down the proposition that in suits at law for infringement of patents, where the sale of licenses by the patentee had been sufficient to establish a price for such licenses, that price should be taken as the measure of his damages against the infringer. The rule thus declared has remained the established criterion of damages in cases to which it was applicable ever since. *Sickels v. Borden*, 4 Blatchford, 14; *The Suffolk Company v. Hayden*, 3 Wallace, 315; *Livingston v. Jones*, 3 Wallace, Jr., 330.

"In cases where there is no established patent or license fee in the case," says the court in the *Suffolk Company v. Hayden*, "or even an approximation to it, general evidence must necessarily be resorted to."

In the case of *Seymour v. McCormick*, a charge very similar to the one given in the present case was held erroneous and the principles we have stated established.

The rule in suits in equity, of ascertaining by a reference to a master the profits which the defendant has made by the use of the plaintiff's invention, stands on a different principle. It is that of converting the infringer into a trustee for the patentee as regards the profits thus made; and the adjustment of these profits is subject to all the equitable considerations which are necessary to do complete justice between the parties, many of which would be inappropriate in a trial by jury. With these corrective powers in the hands of the chancellor, the rule of assuming profits as the groundwork for estimating the compensation due from the infringer to the patentee has produced results calculated to suggest distrust of its universal application even in courts of equity.

Certainly any unnecessary relaxation of the rule we have laid down in cases at law, where the patentee has been in the habit of selling his invention or license to use it, so that a fair deduction can be made as to the value which he and those using it have

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established for it, does not commend itself to our judgment, nor is it encouraged by our experience.

If such be the proper rule in case of the infringer who uses the invention without license and against the consent of the owner, it should not be harsher against the party who uses it with consent of the owner, express or implied, but without any agreement as to the rate of compensation. In such case nothing can be more reasonable than that the price fixed by the patentee for the use of his invention, in his dealings with others, and submitted to by them before using it, should govern.

The case was tried in the court below upon an entirely different theory, against the steady remonstrance and exceptions of the defendants.

With the special contract eliminated from the case, it seems to us to be a very simple one. The defendants have used, or are charged with using, the invention of plaintiffs, with their consent, until the expiration of the patent. If this is proven to the satisfaction of the jury, the plaintiffs have furnished the rule which must measure their compensation, in the prices at which they have sold the same privilege to others, and they must be bound by it.

JUDGMENT REVERSED, with directions to order

A NEW TRIAL.

HUMASTON v. TELEGRAPH COMPANY.

(20 Wallace, 20.)

1. Where a person, on a given contract, covenants to pay a sum whose amount is to be contingent on certain events and is to be ascertained by arbitrators, such person, if he prevent any arbitration, may be sued at law on a *quantum valebat*, and the sum due may be ascertained by a jury under instructions from the court. If the jury, under such instructions, find that only so much is due, the plaintiff can recover nothing more.
2. A contract of a special nature explained and interpreted so as to sustain a charge under which, in a case like that just stated, the jury found as due much less than the plaintiff claimed.
3. Where a person in consideration of property (not money) to be assigned by another, agrees to give a certain number of shares of stock, having on the day of the contract a fixed market value, and, refusing to give the stock, is sued at law for a breach of the contract, evidence of the value of the stock at any other time than at the date of the contract is rightly excluded; its value at that date being agreed on and admitted.

APPEAL from the Circuit Court for the Southern District of New York; the case being thus:

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Humaston having invented certain instruments for expediting the transmission and reception of messages by telegraph, and especially for perforating paper for the purpose of such messages, which inventions were patented, and having also, as he alleged, discovered a process by which paper could be chemically prepared, so as to be sensitive to the electric current, and by which its value would be greatly enhanced, (a process which he kept secret,) entered in April, 1861, along with one Lefferts, who had some interest in the matter with him, into an agreement, as follows, with the American Telegraph Company, a company already established in the business of telegraphing:

"The American Telegraph Company agree to buy, and Humaston agrees to sell a full, perfect, and unincumbered title to all his inventions for all electric telegraph machines and processes, and particularly the patented invention for perforating paper for the purpose of telegraphic messages, and the adaptation and manner of using such perforated paper in the transmission of such messages, including whatever is patented by Humaston in the transmission of messages by telegraph, and also including the secret process of preparing the chemical paper, with the right to procure letters patent therefor.

"The said Humaston and Lefferts agree not to engage, directly or indirectly, in telegraphing during the period of ten years, in competition with the American Telegraph Company, nor in any way aid, countenance, or encourage any telegraph line doing business in any of the States bordering upon the Atlantic ocean or Gulf of Mexico, &c., so as to in any way injuriously affect the business or interests of the American Telegraph Company.

"The consideration to be paid by the company for the said inventions and patents, and agreement against competition, is one dollar, and at least 50 shares of the capital stock of the American Telegraph Company. Upon the execution and delivery by said Humaston of conveyances of the aforesaid inventions and patents, conveying a full, unincumbered, and perfect title to the whole thereof, the said American Telegraph Company are to issue to the said Humaston 100 shares of the stock of said company, and a further consideration of not exceeding 400 shares of the capital stock of said company is to be paid or issued to the said Humaston upon the following stipulations and conditions: Three disinterested referees or arbiters are to decide how much (if any) more is to be issued to the said Humaston after such arbiters shall be satisfied as to the capability and value of said patented inventions; the said referees or arbiters to be mutually selected.

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"It being understood that the aforesaid maximum amount of stock consideration is stated under a claim by the said Humaston and Lefferts that his patented inventions will enable the said company to do by the Humaston system, and on one wire, five times as much business, regularly and accurately, as can be done now on one wire, in the same time, by any system now used by said company, it being also understood that compensation is not to be allowed to Humaston for what is now public, but only for what their patented improvements in telegraphy are worth more than any other of said systems.

"The arbiters or referees are also, in estimating the value of said patented inventions, to consider *the comparative reliability, accuracy, rapidity, cost, and also the expense of working and using said inventions with those now in use.* To enable the said Humaston and Lefferts to prove the capacity and value of the said inventions, full, fair, and sufficient trials are to be allowed to them, and made in such manner, and as often, and for such period of time, as the referees may determine, and the final decision is to be given before the expiration of one year from the date hereof. Each party are to have the right to suggest to the referees such experiments for the testing of such inventions as to them may seem proper. The referees to have full opportunity of investigating and deciding in the matter. It is also understood and agreed that the company are to have reasonable opportunity to examine into the validity and patentability of the patented inventions, and place any questions which may arise thereon before the referees for their decision. But the referees are hereby instructed that under the foregoing paragragh the company are to require only a reasonable amount of evidence as to the validity of the Humaston inventions, and further agreed that, should the referees decide that the invention is wholly invalid, and not patentable, then the company will surrender up and transfer to Humaston, by a good and sufficient assignment, the title to the said patents on the retransfer of 50 shares of stock of the company. Upon the award or decision of said referees, or a majority thereof, being made in writing and delivered to said company, said company are to pay or issue to said Humaston the additional amount, if any, of stock (not exceeding 400 shares,) determined or stated in such award."

Humaston made the requisite transfers, and the matter meant to be submitted was referred to the arbitrators. They accepted their office and entered upon the discharge of their duty, but the *telegraph company withdrew its submission.* Humaston now brought special

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assumpsit against the company, claiming not only the 100 shares of stock which he actually received in 1861, (and then worth \$100 a share, or \$10,000, and which in 1866 was worth \$18,000,) but claiming also the value of the other 400 shares. His position was that by the terms of the contract, he was entitled to the 400 shares unless the arbitrators named a smaller compensation, and that as the company had withdrawn its submission, and so prevented the arbitrators from naming any such smaller compensation, he was entitled to the whole 400 shares.

At the trial, the instruments invented by Humaston were submitted to the jury and explained, and experts, mechanics, and telegraphers examined upon them for several days.

Aster the plaintiff had established what was perhaps a *prima facie* case, his counsel, for the purpose of furnishing a rule for estimating his damages, offered to show that the market value of the stock of the American Telegraph Company on the 12th day of June, 1866, on which day the company had been consolidated with the Western Union Telegraph Company, was \$150. The court excluded the evidence for the purpose for which it was offered, but admitted it as a fact which the jury might consider in estimating the value of the property sold. Subsequently the parties agreed that the market value of the stock of the company on the 1st day of April, 1861, was \$100 per share, and made their agreement known to the court. Thereupon the court held that the evidence as to the value of the stock on the 12th of June, 1866, and at subsequent dates, which had been admitted, was immaterial; and under the plaintiff's exception struck it out and excluded it.

Some of the defendant's evidence tended to show that the plaintiff's invention had no value and had never been used.

The court charged—

That the plaintiff was not entitled, as matter of law, to recover of the defendants the value of the remaining 400 shares:

Also that the plaintiff did not, as matter of law, become entitled to the said 400 shares of stock by reason of the defendant's revocation of the powers of the referees or other breach of contract alleged, but that the plaintiff was entitled, in consequence of the revocation, to bring an action and to recover the excess (if any there was) which the value of what he sold, assigned, and transferred to the defendants (enhanced by the agreement of the plaintiff and Lefferts not to enter into competition with the defendants) had when sold and delivered, over the amount which he had already received, (and that this the parties agreed was 100 shares, of the aggregate value of \$10,000,) with interest on such excess from the

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13th of February, 1867; but if in their judgment there was no such excess, then that their verdict should be for the defendant.

To these instructions the counsel for the plaintiff excepted.

The jury found for the plaintiff, and assessed his damages at \$7,500.

The exclusion of the evidence and the charge of the court were the matters now assigned for error.

Messrs. Truman Smith and Cephas Brainard, for the plaintiff in error, argued the case much at length, and showed, as they conceived, that it was well established both in England and this country, that a stipulation in a contract for a reference of any matter of difference likely or certain to arise thereunder, might be connected with the principal undertaking in such a manner as to make it a *condition*, and that as such it might essentially qualify or affect the rights of one party, or the obligations of the other; that if it were a condition precedent and was not performed, the obligation would be null; and if it were a condition subsequent and not performed, (which the counsel alleged was the case here,) then that the condition became null and the obligation absolute. If the party bound by a condition precedent did not submit, or offer to submit, or having submitted, revoked, his right of action was gone; and if a party bound by a condition subsequent refused to submit, or having submitted, revoked, then the qualification of his liability was gone, and that liability became absolute.

The learned counsel referred to twenty-nine different cases, English and American, beginning with *Vynior's Case*, reported by Sir Edward Coke, 8 Reports, 81b, which sustained, as they conceived, their views.

Messrs. J. R. Porter and G. P. Lowry, contra, citing *Couper v. Andrews*, Hobart, 40, and the opinion of Hobart, C. J., therein; *Brewer v. Hill*, 2 Anstruther, 413, and other cases.

Mr. Justice DAVIS delivered the opinion of the court.

Whether or not the court erred in its charge, and in the exclusion of the evidence excluded, depends on the proper interpretation of the contract and the rule of damages which shall be applied in this action to the breach of it.

It is insisted by the plaintiff that the defendant promised to pay him for his invention four hundred shares in addition to the one hundred shares paid on the delivery of the title, unless the arbitrators should relieve the company by fixing some less amount, and a great deal of learning touching the doctrine of conditions subsequent

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and precedent has been invoked in support of this position. But this doctrine has no application here, for, manifestly, this is not an undertaking to which a condition subsequent could be attached. It is easy to determine why this contract was made, the nature of it, and the acts to be performed by the contracting parties. The American Telegraph Company were engaged in carrying on the telegraph business in some portions of the country, and naturally desirous of appropriating to itself any new invention which would facilitate the transmission of telegraphic messages. Humaston claimed that his system just patented would do five times as much business on one wire as the ordinary systems then in use. If it could do this with equal accuracy and reliability and at no greater cost, the value of it could be hardly overestimated, but there had been no experiments to test the question of whether or not it was capable of doing these things. It might do the work claimed for it and yet be so unreliable, or the expense of working and using it so much greater than the expense of working and using the inventions then open to the public or used by the company, that its purchase would be dear at any price. The company, desirous of possessing everything new and useful in the line of their business, were willing to risk something in the acquisition of these inventions, but unwilling to pay the estimate of value which Humaston put upon them without trial of their utility. This estimate was \$50,000, as the proof on the trial was that the stock of the company stood at par in the market at the date of the contract. The company said to Humaston, We will take your patents, whether valid or not, and pay you \$5,000 for them if you and Lefferts stipulate not to compete with us for a period of ten years, and if they are valid, whether useful or not, the compensation shall be increased to \$10,000. But we cannot promise additional compensation unless, after proper experiment, your system shall be proved to be worth more. It may be that your claim of rapid performance can be sustained, and yet the system, owing to its greater cost than those now in use, or some other controlling practical consideration, be of comparatively little value to us. This can only be determined, after trial, by some impartial tribunal. We are willing that this tribunal shall be referees mutually selected, to whom shall be submitted the question of whether we shall pay anything more than the \$10,000 already paid, after the merits of your system have been tested by them and its capability and value established. They may reach the conclusion that you are sufficiently compensated already, and if they do, their award must be accepted as a final settlement of the matters of difference between us. If they

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reach a contrary conclusion they must fix the amount of consideration which we are to pay in addition to what you have already received; but this must be within the limit of four hundred shares of stock equivalent to \$40,000.

This is a fair analysis of the provisions of the contract and of the considerations on which it was based. Instead of it binding the company to pay four hundred shares, unless a less number was fixed by the arbitrators, it left them to say whether Humaston was entitled to any more than he had already got, and if so, how much. There was no concession by the company that the inventions were worth any more to it than the hundred shares. It might turn out on the trial that the price already paid was excessive, or, on the contrary, that it was not sufficiently remunerative. This point of value the triers were to determine, and if determined favorably to the plaintiff he would have a cause of action against the defendant. Until this determination, if there had been no interruption to the arbitration, no cause of action could arise. It was a reasonable provision that the value of these inventions should be submitted to the arbitration of practical business men, and if Humaston, instead of the company, had refused to proceed with the arbitration he could not resort to an action, for the defendant would not have been in default, and, therefore, not liable to suit. *Delaware and Hudson Canal Co. v. The Pennsylvania Coal Co.*, 50 New York, 250. But the defendant broke the agreement and revoked the submission, and Humaston asks that in consequence of this wrongful action of the defendant his rights may be determined by the court and jury, instead of by arbitration.

It becomes, therefore, important to determine what is the measure of liability for the breach of contract by the defendant. If we are correct in our interpretation of the contract, this action cannot be supported as an action seeking damages for breach of contract to deliver stock, for there was no engagement to deliver any, except on a condition which has not happened, and there is no proof that the arbitrators would have found that Humaston was entitled to receive more stock than he had already obtained.

The action can be supported for the value of the property, and this was the proper subject of inquiry at the trial. The company covenanted to pay this value, to be ascertained in a particular mode, and as they have prevented this mode being adopted, they cannot take advantage of their own wrong and deprive the plaintiff of the opportunity of showing to the court and jury what it is. In lieu of the award of the arbitrators the verdict of the jury can be asked by the plaintiff to determine it. The ascertainment of

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this value was the essence of the contract, the thing on which the submission was based, and the revocation of the submission leaves the jury to settle it. Benjamin, in his Treatise on Sales, (first edition, page 430,) says, if the performance of the condition for a valuation be rendered impossible by the act of the vendee the price of the thing sold must be fixed by the jury on a *quantum valebat*, as in *Clarke v. Westrope*, 18 Common Bench, 765, where the outgoing tenant sold the straw on a farm to the incomer, at a valuation to be made by two indifferent persons, but, pending the valuation, the buyer consumed the straw. And the doctrine of the text is sustained by adjudged cases in this country and England. *Inchbald v. The Western, &c., Plantation Co.*, (head note,) 112 English Common Law, (17 Common Bench, New Series,) 733; *Hall v. Conder*, 89 Id., (2 Common Bench, New Series,) 53; *United States v. Wilkins*, 6 Wheaton, 135, 143; *Kenniston v. Ham*, 9 Foster, (N. H.,) 506; *Holiday v. Marshall*, 7 Johnson, 213; *Cowper v. Andrews*, Hobart, 40-43.

Nothing is, therefore, due on this contract, unless the court and jury, sitting in the place of the arbitrators, shall decide that the plaintiff is entitled to recover for the sale of his inventions more than he has already received. The case was tried on this theory, and the court charged the jury that the value of a specified amount of stock was not the legal measure of the plaintiff's damages, but that he was entitled to recover the excess (if any there was) which the value of what he sold and transferred to the company, enhanced by the agreement of the plaintiff and Lefferts not to enter into competition with the company, as stipulated in the contract, had, when sold and delivered, over the amount which he had already received; and this the parties agreed was one hundred shares of the defendant's stock, of the aggregate value of \$10,000, with interest on such excess from the date of the revocation of the powers of the arbiters. This charge is in conformity with the views we have expressed of the obligations of this contract, and of the rule of damages applicable to the breach of it.

It is urged, however, that the court erred in excluding testimony of the value of the defendant's stock both when they sold out to the Western Union Company and when the revocation occurred.

It is not perceived how the sale to the Western Union Company changed the rights of the parties, for there is nothing to show that it hindered the defendants from acquiring in the market at any time a sufficient number of shares of its stock to comply with the award which it was expected the arbitrators would be suffered to make long after this sale took place.

Syllabus.

If there had been an agreement to deliver a certain quantity of stock, and an action had been brought for the conversion of it, on the ground that the defendant, by the sale to another company, had put it out of its power to comply with the terms of its agreement, evidence of the value of the stock at the time the sale occurred would be competent. And so would evidence of its value at the date of the revocation, if the plaintiff was in a position to support an action for damages for breach of contract to deliver stock. But as he is limited in his recovery to the value of his inventions when sold and delivered, evidence of the value of shares of stock at all is only proper as tending to show the estimate put upon the property by the parties at the time they made their bargain. And as the value of the stock in 1861, when the contract was concluded, was directly shown, its value at any other time became unimportant. The Circuit Court proceeded on the theory, and we think correctly, that the defendant intended to give for and considered the plaintiff's property worth (if it performed certain conditions) the cash equivalent of five hundred shares of stock. This was \$50,000, which the plaintiff must also have adopted as his estimate of the value of the property when he sold it, as he offered evidence tending to show that it was worth that sum, and claimed that the evidence proved the fact. The conflict of testimony on the worth of the Humaston inventions was very great, for the defendant also introduced evidence tending to prove, and claimed it was proved, that these inventions were of no value, or if any, no more than the amount already paid for them.

In this condition of the evidence it was a difficult matter for the jury to settle the issue submitted to them, but as they were able to do it with the aid of the court and eminent counsel, after a lengthy trial, by finding a considerable verdict for the plaintiff, it would seem that he ought to be satisfied with it.

At any rate there is no error in the record, and the judgment must be

AFFIRMED.

WASHING-MACHINE COMPANY v. TOOL COMPANY.

(20 Wallace, 342.)

1. The reissued letters patent (No. 2829) for a new and improved clothes-wringer, granted to Sylvanus Walker, assignee, on the 31st day of December, 1867, construed to be for a U-shaped yoke or frame for supporting a wringing-machine, and for the combination of such a yoke with a clamping device, when employed

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- to hold a clothes-wringer to the side of a wash-tub, and the U form of the frame is essential to it.
2. The use of a portable support for a wringing mechanism which has some of the features of the patentee's device, but which has not the U-formed yoke, or frame, is, therefore, no infringement of the patent.

APPEAL from the Circuit Court for the District of Rhode Island.

The Washing-Machine Company, assignee of Sylvanus Walker, this last being assignee of one Sergeant, filed a bill in the court below against the Providence Tool Company, for an infringement of division No. 2829, of a patent for an improvement in clothes-wringers. The original patent was granted to Sergeant, July 27th, 1858, and was reissued in two divisions, the one in suit being dated December 31st, 1867. Although the matter which was in issue in the present suit was confined, so far as the complainant's title was concerned, to the reissue No. 2829, it may be well to describe the wringing-machine which was the subject of Sergeant's original patent, and out of which the invention patented in the reissue No. 2829 was carved.

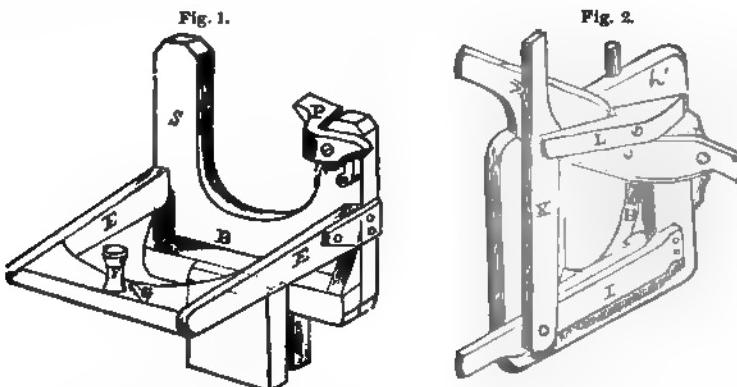
The original machine belonged to the class of clothes-wringers long known as "twist-wringers." In these, clothes are wrung by twisting them into a rope in the same manner as without a machine the washerwoman twists them by hand. This sort of machine differs from another and well-known class of wringers, in which "squeezing rollers" squeeze out by pressure water from clothes passed between them. Both sorts of machines had been in use for many years prior to the patent to Sergeant.

In the original machine of Sergeant, Figure 1 represents a yoke-frame of U form, the curved portion being an arc of a circle. This yoke had a pair of jaws and a clamp-wedge for securing the frame to the side of a tub. To the yoke frame a hinged frame E was attached, which, when in position, stood at right angles with the yoke, as shown in the engraving. At the middle point of the cross-bar which united the two sides of the hinged frame there was set a "hitching-pin," F, around which the clothes to be wrung were partially wound and held fast by the left hand of the washerwoman, while with her right hand she turned the rotary clamp in Figure 2, which formed a part of the machine, and which gave to the clothes the twist which expelled the water.

The rotary clamp shown at Figure 2 must be supposed to be set in the yoke B of Figure 1. It had a ring, H, with flanged edges to hold the clamp in the yoke. I and J were lever jaws which jammed against the portion of the clothes inside the ring, and K was a gag for locking the levers. The outer edge of the ring, H,

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was furnished at intervals with notches, with which the pawl, P, (Figure 1,) could be made to engage, so that the rotary clamp, when the clothes were twisted, could be prevented from turning backwards, and the washerwoman would be able, if she wished to do so, to grip with both hands around the hitching-pin, F, the portion of the clothes "rendered."



With the exception of the model in the Patent Office, there was no evidence that a machine of the kind had ever been constructed. It was too complicated to be practicable.

Such being the machine, the Washing-Machine Company, complainant in this case, (or Sylvanus Walker, rather, from whom the complainants got it,) bought the patent of Sergeant, and obtained the reissue on which this bill was founded.

The apparent idea in getting the reissue was that the apparatus shown at Figure 2 was a wringing mechanism, and was the equivalent of a pair of *squeezing rollers*; that the yoke-frame (Figure 1) was an apparatus separable from the clamp, (Figure 2,) and performed the office of supporting such wringing mechanism; and furthermore, that such supporting mechanism was peculiar in the fact that it had a clamping jaw attached to it which made it capable of being temporarily fastened to a tub. The complainant proposed, therefore, to divide the machine and to claim the yoke-frame and its device for being clamped to a tub, as a separate structure, without regard to whether the wringing mechanism used with such "supporting and connecting apparatus" were rollers or a twister.

The cut, Figure 3, on the page opposite, represents the structure claimed in the reissue under consideration. The specification and claims in this reissue were thus:

"SPECIFICATION.

"The first part of this invention consists of a portable machine,

Statement of the case.

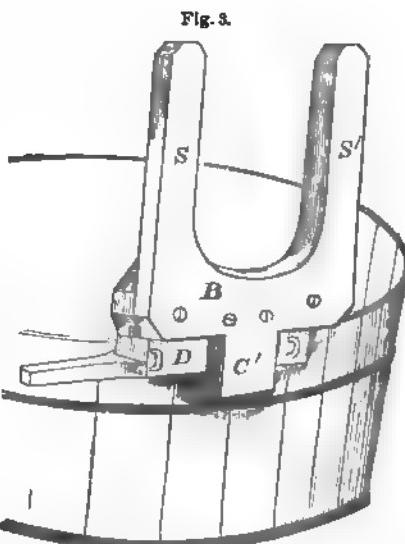
which may be temporarily attached to one side of a common wash-tub, or readily disconnected therefrom, whenever desired, and is especially adapted to wringing clothes.

"The second part of this invention consists in a portable frame, and employed for supporting the wringing mechanism of the machine upon one side of a common wash-tub, by means of a clamping device, which is made to grip one side of a wash-tub, for the purpose of attaching and sustaining temporarily the entire wringing mechanism of the machine upon one side of a common wash-tub, in a firm and expeditious manner, regardless of the diameter of the tub, which greatly accelerates the operations of washing, rinsing, and wringing of clothes, as will be hereinafter more fully set forth and described.

"In the drawings annexed, A represents a common wash-tub. B is a yoke whose inner margin is of U form, the sides of which extend upwards, forming uprights S S'. From the lower end of yoke B extend two jaws, C C', the latter of which contains, within a dovetail groove, a wedge or key, D, whose exposed side is made slightly concave, as shown in Figure 2. The office of the above-described jaws and wedge is to hold the frame, composed of the yoke B with uprights S S' for supporting the wringing mechanism of the machine, in position for use, on one side of a common wash-tub, in a permanent manner, temporarily, regardless of the diameter of the tub or the thickness of its rim, in reference to which service they are termed collectively the 'vise.'

"This arrangement affords great facility for successively washing, rinsing, and wringing out the clothes from several waters in as many tubs, the wringer being readily changed from tub to tub.

"Omitting to describe the general features of the wringing mechanism of the machine, which will form the subject of another application for letters patent, of even date with this, and then more particularly the frame for supporting the wringing mechanism in position, and the clamping device by which the frame for holding



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the wringing mechanism is attached to one side of a common wash-tub, which forms the subject of the present invention.

"When it is desired to have free access to the tub, the wringer may be instantly removed therefrom, so as to allow the operations of washing, rinsing, and wringing to succeed each other, without trouble or delay; or the wringer may be detached instantly, for the purpose of cleaning its parts where dirt is apt to lodge—a common necessity to avoid soiling the next batch after dealing with much soiled or colored garments.

"It will be particularly observed that this wringing machine differs very materially with those heretofore constructed, in its attachment, by a clamping device, to one side only of a common wash-tub, so it can be constructed separate from and independent of the wash-tub, to which it may be clamped, whenever desired, regardless of its size or diameter; and a further distinctive feature consists in the manner of operation. The wringer being placed in position on one side of the tub, and the jaws made to gripe the same firmly, the clothes are admitted to the wringing mechanism of the machine, and pass through it as fast as the water is expelled therefrom, and they are received at the opposite side of the machine into a basket, piece by piece, as they are wrung out. By this means articles that are of lighter fabric, as lace curtains, can be operated upon lightly, as those that are heavy require more force. By this means lace curtains may be wrung without injury, as the force required to expel the water, when all are wrung together in a bag, will tear the lighter fabrics before the water is sufficiently expelled from those that are stout and heavy.

"I am thus enabled to construct a wringing-machine as a separate and independent device from the wash-tub, box, or other receptacle for receiving the water when expelled from the clothes.

"Wringers heretofore constructed have been attached to the opposite sides of the box or vessel, consequently could not be readily attached to the common wash-tubs of various diameters, therefore the box must be of a diameter to correspond to that for which the wringer is adapted, and would thus constitute a part of the device or wringing-machine. Thus, by means of the portable frame for holding the wringing mechanism adapted to clamp the edge of one side only of a common wash-tub, I am enabled to overcome the serious objections referred to above.

"In the clamping device of the invention, a wedge or set-screw, cam, or spring, when having a bearing, so that when power is applied to them they, in conjunction with the jaws, gripe the edge of

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the tub, as a 'vise,' may be used, in the manner and for the purposes set forth.

"CLAIM.

"Having thus described the invention, what is claimed as new, and desired to be secured by letters patent, is—

"1. The employment or use of a portable frame or yoke, B, with uprights, S S', or their equivalents, for supporting a clothes-wringing mechanism in position on one side of a common wash-tub, for the purposes set forth.

"2. The application of an adjustable clamping device, when employed to attach a clothes-wringer to one side only of a wash-tub, substantially in the manner described and for the purposes set forth."

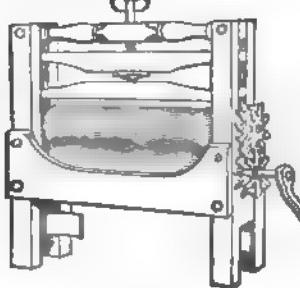
The defendant's machine (of which a drawing appears just below, Fig. 4) had two uprights. It had also a cross-piece connecting the lower parts of these uprights. It also had jaws which extended below the yoke, in position to embrace the side of a wash-tub, to which the machine was to be applied; these jaws being fitted with a screw for the purpose of securing the machine to the object to which the jaws were to be applied. But, as on reviewing it the court considered, *it had not the U-formed yoke.*

The defendant set up want of novelty in the complainant's invention, so that it became necessary to consider the prior state of the art and fix the extent of the claims in the reissue.

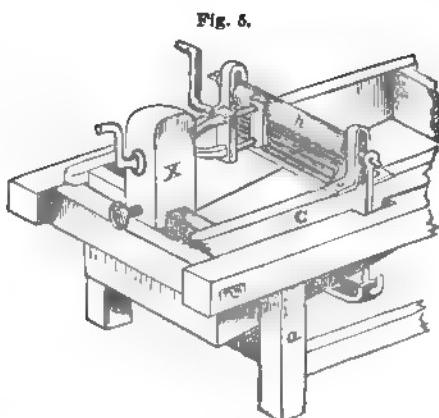
It was not denied that wringing-machines of different forms and of more or less practical value had long been in use, and that devices for clamping or attaching machines of various descriptions to benches, tables, or other articles with which they were used were old and well known. Reels for thread, vises, eyeletting machines, fluting machines, egg beaters, and small mills had been attached to benches and tables by clamping devices similar in principle to the one described in Sergeant's patent.

It appeared also that a patent for a washing-machine had been issued to H. W. Sabin, August 16th, 1845. The cut, Fig. 5, represents this wringer; the parts marked *h* and *g* being a pair of rollers, (one of them fluted,) which served as a substitute for the ordinary hitching-pin; one end of the clothes being held fast between

FIG. 4.



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these rollers while the other end was secured to a contrivance which held them, so that, by means of the crank supported in the screw-clamp, X, they were twisted and made free from water.

In this machine, as the reader will perceive, a wringer—the common twist-wringer—was supported by a standard furnished with jaws and a clamp-screw, the two forming

ing a clamping device such as is in common use in all wringers at the present time. *The standard, however, was not a U-formed yoke-frame*, but was simply a support for the journal of a shaft, although the standard had jaws and a clamping screw adapted to secure the standard to the sides of a wash-tub. Unless, therefore, the U form of the yoke-frame in Sergeant's mechanism was to be considered as an essential part of Sergeant's invention, as distinguished from the standard in Sabin's machine, which was simply a support for a journal, there was apparently no novelty.

The question, therefore, was whether the U-formed yoke was an essential part of the invention sought to be secured by the reissue. If it was, the defendants did not infringe, since they did not use the U-formed yoke, while the other parts of their machine were old.

The court below held that the reissue was only for a combination, and that "the U-formed yoke-frame in the Sergeant machine was necessary as a device for supporting a clothes-wringing mechanism *in the manner and for the purposes set forth.*"

That court accordingly dismissed the bill, and the complainants appealed.

Messrs. J. H. Parsons and T. A. Jenckes, for the appellants; Messrs. B. H. Thurston and C. L. Woodbury, contra.

Mr. Justice STRONG delivered the opinion of the court.

The only question presented by this appeal is whether the reissued patent has been infringed by the defendants. To a correct determination of this question it is indispensable to understand precisely what the patent covers.

The mechanism described in the specification is not claimed to be a complete clothes-wringer. It is rather a device for suspending a wringer over a common wash-tub, a portable frame which may be

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attached to one side of the tub, and detached at pleasure. In the description of the drawings accompanying the specification, and a part thereof, it is called a frame for supporting the wringing mechanism of the machine as attached to one side of a common wash-tub by means of a clamping device, and the first part of the invention is said to consist of a portable machine which may be temporarily attached to one side of a common wash-tub or readily disconnected therefrom whenever desired, and is especially adapted to wringing clothes.

The second part of the invention, as described in the specification, consists in a portable frame employed for supporting the wringing mechanism of the machine upon one side of a common wash-tub by means of a clamping device, which is made to gripe one side of a wash-tub for the purpose of attaching and sustaining temporarily the entire wringing mechanism of the machine in a firm and expeditious manner, regardless of the diameter of the tub. Such is the language of the patentee. The specification then refers to the drawings, in which what is called the first part of the invention is represented as "a yoke whose inner margin is of a U form, the sides of which extend upward, forming uprights." From the lower end of the yoke extend two jaws, one of which contains within a dovetail groove a wedge or key whose exposed side is made slightly concave. The office of the jaws and wedge is to hold the above-described frame or yoke for supporting the wringing mechanism of the machine in position for use on one side of a common wash-tub, in a permanent manner, temporarily, regardless of the diameter of the tub, or the thickness of its rim, in reference to which service they are termed collectively, the "vise." Then follow the claims of the patent, the first of which is "the employment of a portable frame or yoke B, (which in the drawings is represented as a U-shaped upright frame,) with uprights, S, S', (the sides of the yoke,) or their equivalents, for supporting a clothes-wringing mechanism in position on one side of a common wash-tub, for the purposes set forth."

The second claim is "the application of an adjustable clamping device, when employed to attach a clothes wringer to one side only of a wash-tub, substantially in the manner described and for the purposes set forth."

Regarding these two claims as descriptive of two distinct things, the first must refer to the U-shaped yoke or frame for supporting a wringing-machine, as exhibited in the drawings, and explained in the specification, and the second to a combination of the yoke with a clamping device, when employed to hold a clothes-wringer

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to the side of a tub. It need hardly be said that the claims are to be construed with reference to the state of the art at the time when the alleged invention was made. The case shows that clothes-wringers of many kinds were known and in use before the original patent was granted to Sergeant. These all had frames for holding them in position, some attached permanently to the wash-tub and others detachable. Their prior existence is recognized in this patentee's specification. Clamping devices of many varieties were also old and well-known means of fastening machines or supports for machines to chairs, benches, platforms, tables, and other articles. Apple-paring machines, coffee-grinders, thread-reels, and smith and carpenters' vises had been supported and held in position by devices like in principle to the clamping arrangement described in the complainant's patent. And it is in proof that letters patent for a washing-machine were granted to H. W. Sabin, on the 16th of August, 1845, in which a clamping device for attaching the support of a wringing-machine to the side of a tub, and in combination with the support was employed; a device consisting of jaws at the lower extremity of the support, with a screw for compression, identical in principle with that claimed by the complainants. It is very obvious, therefore, if their patent can be sustained at all, it cannot be construed as claiming *all* forms of a portable frame or support for a washing-machine, nor a combination of a clamping device with *any and every* kind of such support or frame.

It may well be doubted whether a frame with no distinctive peculiarities, intended for the support of a wringing machine and sufficient for such a use, though so constructed as to be capable of being attached by projecting jaws to the top of a wash-tub, could be regarded as patentable. Such a mode of attachment has been known and employed time out of mind, and if, before the Sergeant patent was granted, it had not been used in connection with, or as part of a frame or standard for the support of a wringing-machine, the new application, without any novel and useful result, could hardly be considered invention. It would be but a case of double use. Besides, to this extent the Sabin machine had reached years before the Sergeant patent was granted, and, therefore, unless the complainant's patent is limited to some distinctive features other than the jaws at the bottom of the yoke or frame, it must fail for want of novelty if not for want of invention. And this we do not understand to be seriously questioned. We do not understand the complainants as contending that either of the claims of their patent should not be construed as embracing only the peculiarly constructed frame or yoke described in the specification.

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What, then, are the distinctive features of the frame, and what are the proposed offices of these features? Manifestly the thing sought to be secured by the peculiarity of form described was not merely a support for a wringing-machine, not merely a standard to hold the machine in position, but a manner of support. And beyond all doubt the U form of the frame is essential. Indeed, it is the only form exhibited in the drawings and described in the specification. The purpose of the frame is also avowed to be to support the clothes-wringer, and the frame exhibits no means of support except the semicircular bottom of the U, which forms a journal bearer, on which the journal of the wringer may rest, while the uprights serve to keep it in position. By themselves the uprights serve no other purpose, and they are no more essential than is the curvilinear space between them, the bottom of the U in the interior of the yoke. It is true a clothes-wringer might be attached to them by the aid of additional devices, but no such devices are disclosed in the drawings or in the specification, and had they been added the frame would have been substantially different from the one patented. It would have been capable of a new use. Equally well could additional devices have fitted the Sabin standard for use in a manner different from that in which it was employed.

Discarding, then, the jaws and the wedge, or other clamping device, as neither patentable by themselves nor patentable in combination with a wringing-machine supporter, or frame, in view of the state of the art when this patent was issued, unless the structure of the frame was such as to obtain a novel and useful result, it becomes evident that the shape of the frame must be regarded as one of its most important elements. And if this be so, the novelty of the frame does not consist in its having two uprights standing apart from each other without regard to the figure of the intervening space. As we have seen, if the semi-circular shape of what in the specification is called the inner margin of the yoke, that is, of the space between the uprights, is not a necessary constituent, the yoke cannot accomplish the results claimed for it, and no manner of support for a wringer is exhibited. Surely a frame shaped like an inverted M () though it would have two uprights separated by a space and connected at the bottom, would be essentially different from that claimed in this patent, because incapable of the same use. It could not support a clothes-wringer in the manner described in the drawings annexed to the patent. A space bounded by right lines is not substantially the same as one bounded by a curve, and unless we throw out of the specification and the claims

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all that is said respecting the configuration of the interval between the uprights, we must hold that the defendants, in the use of their device, have not been guilty of any infringement of the complainants' rights. They have used a portable support for a wringing mechanism which has some of the features of that of the complainants, but it has not the U-formed yoke, which is essential to the patented combination.

DECREE AFFIRMED.

This case was argued before the CHIEF JUSTICE took his seat, and he did not participate in the judgment.

HAILES v. VAN WORMER.

(20 Wallace, 353.)

1. A new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the *combination*, and not a mere *aggregate* of several results, each the complete product of one of the combined elements.
2. Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention.
3. No one, by bringing together several old devices without producing a new and useful result, the joint product of the elements of the combination, and something more than an aggregate of old results, can acquire a right to prevent others from using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others, in combination.

APPEAL from the Circuit Court for the Northern District of New York.

Hailes & Treadwell, manufacturers of stoves, filed a bill in the court below against Van Wormer *et al.*, engaged in the same business, to enjoin these last from making a certain sort of coal stoves called "base-burning," "self-feeding," or "reservoir" stoves. These stoves are so called because they have a magazine or reservoir suspended above the fire-pot, which may be filled with coal at its upper extremity. This, when filled, is closed by a cover. The lower end of the reservoir or feeder is left open, and, as the coal in the fire-pot is consumed, that in the reservoir falls and supplies the place of that consumed, the combustion being only in the fire-pot, and not in the reservoir. Every reader, on looking at the diagrams on pages 641, 642, and 643, will recognize the sort of stove referred to.

The value of this sort of stove, which had been in large use in

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FIG. 1.—Base-burning Stove.

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FIG. 2.—Base-burning Stove without the casing.

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FIG. 3.—Vertical section of Base-burning Stove.

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this country for some time, was not a matter of question. But persons were not all agreed as to what was the most economical and otherwise the most advantageous mode of embodying the principle which made the distinguishing characteristic of the stoves.

The bill was founded on two letters patent; one reissued patent, granted to the complainants, February 3d, 1863, for an "improvement in stoves," the original patent having been granted to Hailes & Treadwell, as inventors, May 7th, 1861; the other a patent granted to one Mead and Hailes, assignees of Hailes & Treadwell, as inventors, August 11th, 1863, for an "improvement in coal stoves;" the interest of Mead in which patent had become vested in the complainant Treadwell.

The specification of the reissue of February 3d, 1863, said:

"Our experience in this class of stoves" (base-burning or reservoir stoves) "is, that the most beneficial effects are to be secured from an organization which does not pass the products of combustion up, around, and over the top of the coal supply reservoir, so as to heat a surrounding jacket thereof, but heats a circulating or ascending body of air by means of radiated heat from the fire-pot, and at the same time heats the base of the stove by means of direct heat, circulating through descending flues which lead into the ash pit, or around it, and to the smoke and draft flue; also, that the greatest economy, considering the increased benefit secured from supplying coal continuously out of a reservoir, is attained with an arrangement which holds the superincumbent body of coal in suspension, such arrangement being a reservoir with a contracted discharge extending slightly down into a flaring or enlarged fire-pot, around or above the whole upper edge of which, outside of the contracted discharge of the coal-supply reservoir, the flame is allowed to circulate, and, therefore, caused to descend and circulate around or under the base portion of the stove, in its passage to the smoke and draft flue.

"The effect of the first-named plan is to husband the radiated heat and use it for the purpose of warming the upper part of the stove and the room in which it is situated, as well as for heating air for warming rooms above, if desirable, and at the same time to so confine the direct fire-heat and keep it in contact with the base portion of the stove a sufficient length of time as to insure the warming of the same to a comfortable degree.

"The effect of the second plan is to relieve the incandescent coal from the weight of the body of superincumbent coal, and thus obviate a compression of the incandescent coal in the fire-pot, and secure for the flame a free expansion in a lively and brilliant

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manner, and thus enable it to act with great heating effect upon the lower portion of the stove in its passage to the smoke and draft flue.

"With the view of organizing a stove or heater which operates on the base-burning or coal-supply reservoir principle, and at the same time embraces the two plans of operation above referred to, we have devised the following plan of construction:

"A is a base of our stove, constructed with a chamber B, which extends around and beneath the top plate of the said base. In this chamber air may be admitted through the front passage A. Upon the top plate of the base A is erected a support C, for horizontal grate D, and a fire-pot E, as shown. The support forms a chamber below the grate, and out of the front of the support a por-

Fig. 4

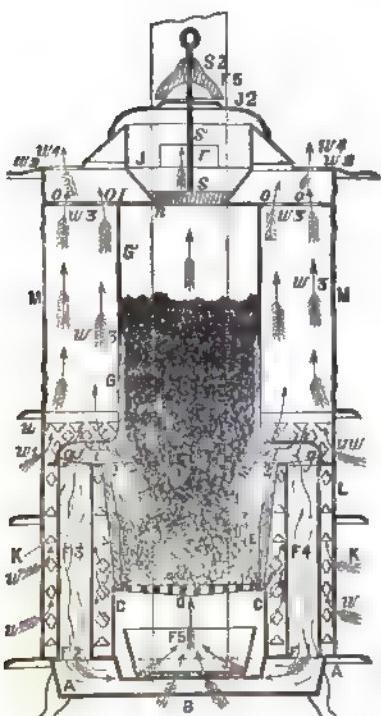
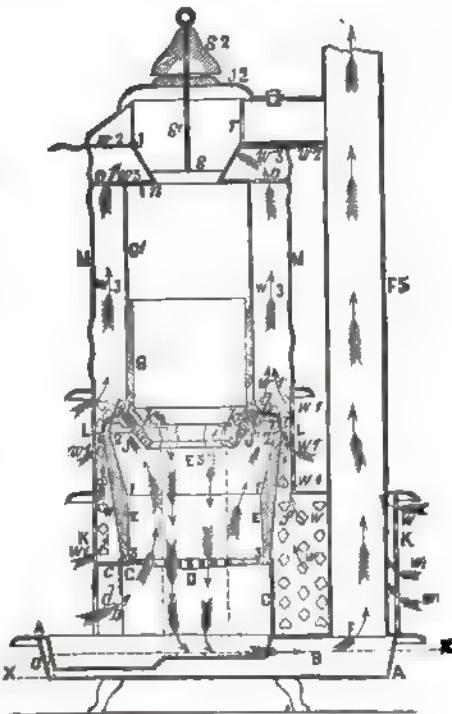


FIG. 5.



tion of metal is removed as at *b*, so that air to the fire on the grate may have free access when the ordinary regulator or damper is open. In order to insure the passage of the air to the fire only from below the grate, a cut-off, *c*, extends out from the upper front part of the support *C*, and rests upon the two lateral stops *d*, which extend out from the front of the support, as shown. The top plate

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of the base, at points outside of the support C, is perforated with three apertures, F, F¹, F², which communicate with the chamber B. The apertures F¹, F², have vertical pipes F³, F⁴, placed in or around them, while the aperture F has the draft and smoke pipe or flue F⁵ placed in or around it, as shown. The pipes F³, F⁴, extend up to the upper rim of the fire-pot E, and connect to perforated flanges or ears of said pot, so that a space, f, exists between the pipes and fire-pot, as shown. The outer portion of the top edge of the pipes F³, F⁴, protrudes above the flanges to a slight degree, as indicated at g, g.

"The fire-pot flares at top and contracts at its bottom; the flare and contraction are gradual. The section of the metal, of which the pot is made, shows a gradual decrease in thickness from the centre of the depth of the pot in an up and downward direction, as indicated at 1, 2, 3. This construction or form of the metal insures an equable heating of the pot at all parts, and a uniform expansion and contraction by the principle of conduction, the thickest and most intensely heated portion imparting to the thinnest or less intensely heated portions a large amount of its heat, on the principle just mentioned.

"Above the fire-pot and vertical pipes the coal-supply reservoir G is arranged. The reservoir is constructed with a flange, h, at its base, said flange turning down at its outer edge so as to form a right angle, or thereabouts, as shown at i. The rim, i, of the flange fits down upon the rim of the fire-pot and incloses the top opening of the fire-pot of the vertical pipes within a continuous chamber J, as represented; the said chamber constituting an enlargement to the upper portion of the fire-pot, as it were, and thus giving increased room for the expansion of the flame.

"The diameter of the coal reservoir is decreased below the point where the body of supply coal is suspended by means of an extension or ring flange k, which is in form of an inverted frustum of a cone. This flange also serves, in connection with a detachable ring, v, which, also, is in form of an inverted frustum of a cone, to form a frame or sash for the reception of fire brick or other fire-proof material, as shown at m. The ring v has a horizontal flange, and bolts by the same, to the under side of the flange n of the coal-supply reservoir. The fire brick are shaped so as to form, when put together, an inverted frustum of a cone, and they, therefore, when clamped between the devices k, v, cannot descend, separately, out of their places, nor can they do so unitedly, as the largest circumference of the conic frustum m cannot pass through the space between the lower ends of the devices k, v. It will be observed

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that the fire brick continue the contraction of the coal-supply reservoir, and thus insure a gradual descent of the supply coal upon the central part of the bed of incandescent coal, and at the same time leave a large and open space outside of the conic frustum *m*, for the free burning and expanding of the gases or flame. This result is also furthered by the dishing form of the flange *h*, the same forming a large circulating flame channel, *J*, all round the upper edge of the fire-pot, as illustrated.

"The reservoir *G* is continued up to a horizontal division plate *I* of the stove, by means of an extension *G¹*, as shown. The division-plate *I* has a large coal-induction hole *n* in its centre and several hot-air passages *o o* near its circumference or outside of the circle of the coal-supply reservoir, as shown. Around the central hole *n* there is constructed a small, combined cylindric and conic hopper *J*, which is furnished with an adjustable valve *s*, and a removable cover-plate *J²*, as hereinafter described. Through and from the rear of this hopper there extends a branch draft-flue *r*, the same leading into the main draft-flue *F³*, as shown. In order to open and close this flue (*r*) and also to open and close the induction-hole to the coal-supply reservoir, the taper-valve *s* is fitted to the lower part of the hopper *J*, and up from the centre of the back of this valve a vertical rod *s¹* extends and passes through the removable cover-plate *J²* of the hopper, and also through a weight *s²*, as shown. The weight *s²* is not level on its bottom with the top surface of the cover-plate *J²*, nor is the quantity of metal on one side of the rod as great as that on the other side. The cover-plate, the valve, the rod, and the weight, are all connected together, so that by taking hold of the rod the whole can be lifted together, that is, when the valve is raised, first, to its full stroke; but the connection is also such that, when the valve is required to be raised a less distance than its full stroke, the movement of the valve is independent of the cover-plate *J²*; therefore the branch-flue *r* can be opened and closed or the damper-valve adjusted without disturbing the cover-plate, and whenever such an adjustment of the valve is made, the weight, by reason of its being unbalanced, will automatically bind upon the rod and hold it and the valve in suspension.

"It is desirable to open the branch of the direct draft-flue when the fire is first started, and also before the cover-plate *J²* is removed, first, in order to obtain a powerful draft, and second, to pass off the pent-up gases in the coal reservoir through the branch-flue, instead of allowing them to puff out into the room at the time when fresh coal is being introduced.

"The organization thus far described has but one shell, and in

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order to make it a double shell or wall-stove a casing, K, L, M, is placed around it from base to top. The part K of this casing incloses a portion of the fire-pot, and of the vertical pipes and draft-flue. This part is finely perforated all around so as to admit air to the first wall, to be heated as indicated at w. The part L of the casing incloses the remainder of the vertical pipes and fire-pot, and also a small portion of the coal-supply reservoir, but not the main draft or smoke-flue. It is also finely perforated so as to admit cold air, as indicated at w¹. The part M of the casing incloses the remainder of the coal-supply reservoir, and extends up to and unites with a stationary top or finishing plate W². This part of the casing is not perforated, but the plate W² has perforations through it for the escape of the confined heated air W³ into the room or into pipes leading to rooms above, as indicated by arrows W⁴.

"It will be seen that the air circulates all about the radiating surface, and thus protects the same from rapid destruction by the fire, and while this is the case the air is very thoroughly heated, and discharged in that state into the room where the stove is situated, or into other conductors."

There were in this reissue twelve claims, the first five of which, the complainants alleged, had been infringed by the defendants, namely:

"(1.) A base-burning, coal-supply reservoir stove or furnace, so constructed that the products of combustion do not pass up, around, and above the supply-reservoir, nor up through the grate, but down outside of the fire-pot toward the base of the stove, and out through a main draught flue, which leads directly from a space or chamber about the lower part of the stove, all for the purpose set forth and substantially as described.

"(2.) The contracting of the discharge end of the coal-supply reservoir, the expanding of the fire-pot, and the extending of the flame-passage downward, for united operation, in a base-burning, coal-supply reservoir stove or furnace, essentially as set forth.

"(3.) A fire-pot resting on a base, and imperforated on its inner or outer circumference, or from its inner to its outer circumference, and so constructed and applied, with respect to a coal-supply reservoir, that an inclosed horizontal chamber for the free expansion and circulation of the flame and gases, is formed all around and outside of the contracted discharge, and above the upper edge of the fire-pot, substantially as and for the purpose set forth.

"(4.) The descending passage or passages, in combination with

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the continuous flame-expansion and circulation passage, and a main draft-flue, leading out of the base or lower part of the stove or furnace, substantially as set forth and for the purpose described.

"(5.) Constructing the fire-pot of a base-burning, coal-supply reservoir stove or furnace, with an imperforated circumference and in the form of a trumpet-mouth at its upper portion, in combination with descending flame-passages, substantially as described and for the purpose set forth."

The specification of the patent of August 11th, 1863, stated that the invention covered by it was an improvement on the stove patented by the reissue of February 3d, 1863, and consisted,

"1st. In the construction of an illumination window or windows, at one or more points in the continuous flame-expansion chamber or channel, which is about the base of the coal-supply reservoir and the top of the coal-burning fire-pot, in combination with a descending flue which leads to a chamber about the base of the stove, and from such chamber into a chimney-flue.

"2d. In the construction of a damper draft-flue in the continuous flame-expansion chamber or channel, located as just stated, in combination with a descending flue, which first leads down into a chamber about the base of the stove, and then into the chimney-flue, with which the damper draft-flue connects directly at the top of the fire-pot."

The patent (see figures on page 650) proceeded:

"Fig. 1 is a vertical longitudinal section of a stove patented by us at previous dates, with our improvements of the present date applied to it.

"Fig. 2 is a vertical transverse section of the whole stove.

"Our first improvement is carried into practice by casting the fire-pot A with a rectangular, elliptical, or circular extension a (Fig. 1) (6) at one or more points of its upper edge. This enlargement we extend through an opening in the outer casing or jacket B of the stove, and close it with mica or other transparent material C, as shown. We may find it more practical to form a short ledge on the upper edge of the fire-pot, as at b, and cast the enlargement c on the part D, which forms the expansion-flame passage E, as shown. In any case, the illumination-window must be constructed so as to confine the flame and gases at this point within the flame-chamber E.

"Our second improvement is carried into practice by casting in like manner an enlargement of proper form to make a branch-flue

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FIG. 6.

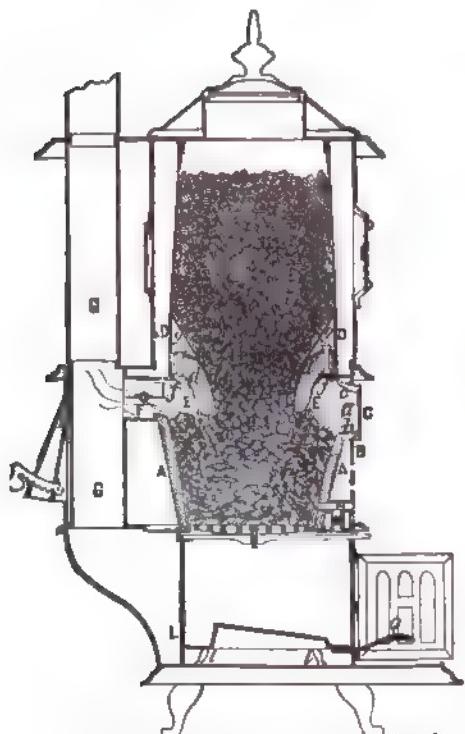
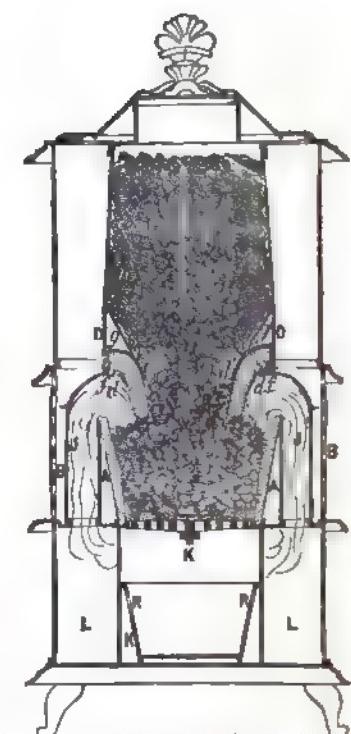


FIG. 7.



F on the upper edge of the fire-pot, or on the lower edge of the part D, as represented. This branch-flue we run into the smoke-pipe or draft-flue G, and in order to open and close it at will, we have arranged within it a damper or valve I, which has its rod, by which it is turned, extended to the outside of the casing of the stove. By opening the damper a direct draft is obtained, and the fire can be kindled very speedily, and the draft does not have to pass up through the body of coal in the reservoir, as in our other patented stove. When the damper is closed, the highly ignited gases pass down the descending flues J J, as in our former patent. We will here state that we have slightly modified the base of our stove by increasing the depth of the ash-pit K, and dispensing with a chamber or space underneath the ash-pit. This space or chamber L, in which the heated products of combustion circulate to heat the base of the stove, and pass to the draft or smoke-flue, being only around the ash-pit."

There were in this patent six claims, the first two of which, the complainants alleged, had been infringed by the defendants, namely:

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"(1.) The combination of the illuminating openings, flame-expansion chamber, coal-supply reservoir, fire-pot, descending flue and draft-flue, substantially in the manner and for the purpose described.

"(2.) The combination with the flame-expansion chamber, formed at the base of the coal-supply reservoir, and around the upper edge of the fire-pot of a base-burning stove, of the branch draft-flue with damper, when the same are located with respect to the flame-expansion chamber, fire-pot, coal-supply reservoir, and descending combustion-flues, substantially as and for the purpose described."

Certain parts of the things above described were shown by the evidence, or were admitted, not to be new in A. D. 1861, when the complainants professed to have invented their base-burning stove. Among them these:

The introduction of a magazine or reservoir into a stove for the purpose of supplying coal to the fire-pot below.

The contraction of the lower end of the said reservoir, so that it should be smaller than the upper portion thereof, which, the complainants asserted, aided in sustaining the mass of coal therein, and prevented too great pressure upon the burning coal in the fire-pot.

The construction of a fire-pot of larger diameter at the top than at the bottom.

So also stoves so constructed that the smoke, gas, and other products of combustion passed from the fire-chamber through downward flues to or near the level of the bottom of the stove were common; the revertible flues so-called had long been in use.

In one of the exhibits these products of combustion were passed down and through a chamber in the base of the stove and thence out into the smoke pipe.

The addition of a direct draft to such stoves as were constructed with revertible flues by means of a flue above the fire-pot, provided with a damper to be closed after the fuel had been ignited, was no novelty.

The use of openings in the exterior or shell of the stove and the insertion of mica therein in order to permit the light emitted in the process of combustion to be seen, had been employed for very many years.

The stove of the defendant, which the complainants alleged infringed their patents, contained in combination several of the devices claimed by the complainants, as—

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1. The flaring fire-pot supported by a base, the diameter of the pot narrower at the bottom than at the top.
2. A vessel over the fire-pot to receive the coal, and let it down by way of supply on the fire below ; the lower end of the vessel being narrower than the upper.
3. Reversible flues outside of the pot to conduct the products of combustion downwards to the base of the stove and thence to a main draft-flue leading thereout.
4. A direct draft for such stoves as are constructed with reversible flues, the direct draft being obtained by a flue passing out above the fire-pot, and provided with a damper to be closed after the fuel has been ignited.
5. Holes or openings in the iron case of the stove in which to put plates of mica so as to let the fire in the stove be seen through it, and to give light to the room in which the stove is.

In the defendant's stove, however, there was no such peculiar structure of the lower extremity of the supply reservoir, nor such a closed expansion-chamber as in the complainant's stove ; the reservoir did not rest on the fire-pot ; nor had it a connection either with it or with the sides of the stove ; nor was there anything interposed to the passage of the products of combustion up and around the reservoir when the flue for direct draft was open ; and when that flue was closed the flame was not detained over the burning coal, but the products of combustion passed directly across the edge of the fire-pot and descended along its sides to the interior draft-passage.

So, in the defendant's stove, the entire space around the magazine and the fire-pot was completely inclosed. There was but a single chamber around the reservoir over the surface of the burning coal and around the fire-pot. Through this chamber the products of combustion passed, either through the direct draft-flue, when that was in use, or to the base of the stove and thence outward.

The court below dismissed the bill and the complainant brought the case here.

Mr. E. H. Bennett, for the appellant ; Mr. C. M. Keller, for the appellee.

Mr. Justice STRONG delivered the opinion of the court.

The sort of stoves known as "base-burners," or self-feeding stoves, had been made and they were well known years before either of the complainants' patents were granted, and it is not asserted that merely as base-burning stoves they are within the monopoly of the patent. The inventions claimed are alleged im-

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provements in the structure and arrangement of such stoves. They consist in what is described as a new combination of old and known devices producing a new manufacture, namely, a stove uniting in itself all the advantages of a reservoir stove, and those of a reversible-draft stove which prevents the products of the combustion in the fire-pot from passing up, around, and over the reservoir, thereby heating the fuel therein so as to expel its gases, and cause their explosion as well as their escape into the apartments where the stove may be placed. All the devices of which the alleged combination is made are confessedly old. No claim is made for any one of them singly, as an independent invention.

It must be conceded that a new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made. But the results must be a product of the combination, and not a mere aggregate of several results each the complete product of one of the combined elements. Combined results are not necessarily a novel result, nor are they an old result obtained in a new and improved manner. Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention. No one by bringing together several old devices without producing a new and useful result the joint product of the elements of the combination and something more than an aggregate of old results, can acquire a right to prevent others from using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others, in combination.

If now we examine the patents held by the complainants, looking first at the objects sought to be obtained by the combinations for which the patents were granted, they are, as described in the specification, first, to prevent the passage of the products of combustion up, around, and over the top of the coal-supply reservoir, so as to heat a surrounding jacket thereof; and, secondly, to heat a circulating or ascending body of air by means of radiated heat from the fire-pot, and at the same time to heat the base of the stove by means of direct heat circulating through descending flues which lead into the ash-pit, or around it, and to the smoke and draft flue. A third avowed object is to secure economy by retarding the fall of the coal into the fire-pot from the supply reservoir, and by causing the flame to circulate outside of the contracted discharge of the reservoir, and around the upper edge of the fire-pot, and thence to descend around or under the base of the stove in its passage

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to the smoke and draft flue. Such are the avowed objects of the combinations claimed to have been devised by the patentees, and their effects they assert to be husbanding the radiated heat, and using it for the purpose of warming the upper part of the stove and the room in which it is situated, as well as for heating air for warming rooms above, if desirable, and at the same time so confining the direct fire heat, and keeping it in contact with the base portion of the stove as to insure warming it to a comfortable degree. A second effect claimed is relief of the incandescent coal from the weight of the body of superincumbent coal, thus preventing the compression of the burning coal in the fire-pot, and securing for the flame free expansion, thus enabling it to act with greater heating effect upon the lower portion of the stove in its passage to the smoke and draft flue.

The combination employed to produce these effects consists of the following devices, among others:

1st. A flaring fire-pot supported by a base, the diameter of the pot being larger at the top than at the bottom.

2d. A magazine or reservoir for supplying coal, located over the fire-pot, and having its lower end contracted.

3d. Reversible passages or flues outside of the pot for the conduct of the products of combustion downwards to the base of the stove and thence to a main draft flue leading thereout.

4th. A direct draft for such stoves as are constructed with reversible flues, the direct draft being obtained by a flue passing out above the fire-pot and provided with a damper to be closed after the fuel has been ignited.

5th. Openings in the case or exterior of the stove and the insertion of mica therein for the purpose of illuminating the room in which the stove may be with the light of the burning fuel.

These devices *with others* are brought together and claimed as a new combination, and several combinations of some of them are also claimed as inventions, producing novel and useful results. What those other devices are we need not specify, for it is not shown that they are employed by the defendants.

The stove of the defendants does, however, contain all those mentioned and contain them in combination. That each of them was an old device, well known, and in public use before the patents of the complainants were granted is abundantly proved by the evidence submitted. A flaring fire-pot, a supply reservoir with its lower extremity of smaller diameter than its upper, reversible flues, a place for flame expansion above the fire-pot, the addition of a direct draft for use in igniting the fuel, provided with a damper,

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and the insertion of mica for illumination openings, were all found in stoves before Hailes and Treadwell claimed to have made their invention. It is true there is a peculiarity in the construction of the lower extremity of the complainants' supply reservoir. It is provided with a circular flange, extending outward and bending downward, so as to fit upon the upper rim of the fire-pot, and thus form a closed combustion-chamber. This, of course, cuts off communication with the space around the upper part of the reservoir, and confines the flame and other products of combustion within a circular combustion-chamber thus formed, leaving no outlet for them except through ear passages into revertible flues. For this device, the peculiar structure of the reservoir, and the formation of the closed expansion chamber, there is no equivalent in the defendant's stove. There is no such closed chamber. The reservoir does not rest on the fire-pot. It has no connection with it, or with the sides of the stove. Nor is there any obstacle interposed to the passage of the products of combustion up and around the reservoir when the flue for direct draft is open. And when that flue is closed, the flame is not detained over the burning coal, but the products of combustion pass directly across the edge of the fire-pot and descend along the sides thereof to the inferior draft-passage. Such an arrangement is not fitted to produce the effects sought and claimed for the complainant's stoves. On the contrary, it plainly excludes them.

There are other differences in the devices used both in the complainants' and the defendants' stoves, which we think are substantial and not merely formal. The combination claimed by the complainants passes the products of combustion out of the chamber through perforations in the flange or through ears into flues leading downwards but wholly exterior to the fire-pot, and not in contact with it. This arrangement makes it possible to introduce external air through perforations in the outer casing of the stove, and allow it when heated by contact with the fire-pot and the descending flues to escape from the top. Accordingly the outer casing is perforated, and there is no closed magazine around the fire-pot. But in the defendants' stove there is no such device and no such effects are produced. There are no external downward flues separated from the fire-pot. The whole space around the magazine and the fire-pot is completely inclosed. There is but a single chamber around the reservoir, over the surface of the burning coal, and around the fire-pot. Through this chamber the products of combustion pass, either through the direct draft-flue, when that is in use, or to the base of the stove and thence out-

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wards. This arrangement also excludes the possibility of an effect claimed for the Hailes and Treadwell invention. It admits of no space around the fire-pot to which the external air can have access.

It is not, then, the combination of old devices which the defendants use that Hailes and Treadwell invented. It is not those old devices that produce the new results claimed. The complainant's combination is a different thing. It has a greater number of constituent elements. It consists in the employment of the devices used by the defendants, together with others they do not use, and the result of the entire combination is the production of a stove differing very materially from that of the defendants. And the defendants' combination cannot produce the results claimed for that of the complainants. We have said that the new results claimed, whatever they may be, are not the production of the combined devices common to both stoves. The devices used by the defendants produce no new effects, because used in combination. The space around the fire-pot leading to the base doubtless secures the beneficial results long known to follow the use of revertible flues. It may be conceded to be an equivalent for such flues. But the results of its construction are not changed by the fact that a flaring fire-pot, and a supply reservoir with a contracted discharge end, and openings for illumination are used in the same stove. It still operates to conduct the products of combustion to the base, and into the exit flue. No new operation is given to it by the combination. The same may be said of every other device employed by the defendants which is also in the complainants' combination. Each produces its appropriate effect unchanged by the others. That effect has no relation to the combination; in no sense can it be called its product. Thus far nothing novel is produced. This, then, is mere aggregation of devices, not invention, and consequently the use of those devices, either singly or together, cannot be held to be any infringement of rights belonging to the complainants.

We pass now to consider more in detail the claims in the complainants' patents which it is alleged the defendants have infringed. The first in the reissued patent, dated February 3d, 1863, is unquestionably too broad to be sustained, unless limited to the means described in the specification. So it was doubtless intended by the patentees to be limited, for the claim speaks of the combination claimed "as substantially described," that is, described in the specification. Thus limited, one of its essential elements is a closed combustion chamber over the fire-pot, formed by a flange of the reservoir resting on the upper edge of the pot, and provided

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with perforations or ears connecting with two flues passing downwards. This element is indispensable for the purposes asserted in the claim, as well as in the specification. And the peculiar structure of the chamber is more than formal. It is functional. It prevents the passage of the flame and other products of combustion up, around, and over the supply reservoir, which is a leading avowed object of the invention, precisely the improvement patented. But this constituent of the combination the defendants have never used, nor have they used any corresponding device, or device producing the same results.

The second claim is for contracting the discharge end of the coal-supply reservoir, expanding the fire-pot, and extending the flame passage downward for united operation in a base-burning coal-supply reservoir stove or furnace, essentially as set forth. The means set forth for extending the flame passage downwards are perforations through the flange forming the lateral boundary of the closed combustion-chamber, or ears leading thereout, and close flues extending from the ears or perforations downward at some distance from the fire-pot through a space bounded on one side by the fire-pot and on the other by an outer casing of the stove perforated for the admission of external air. It might, perhaps, be questioned whether there is any device in the defendants' stove corresponding to this; but waiving the consideration of that question, it is very evident that the combination of the three devices named is not the work of invention. They have no relation to each other. Neither the form of the feeder nor the shape of the fire-pot bears at all upon the direction of the draft passages. There is no novel result flowing from the joint operation of the three devices. The revertible flues have no more to do with a stove supplied by a feeder than they would have with a stove supplied by hand. There is, therefore, nothing in this claim that interferes with what the defendants have done.

An essential element of the combinations mentioned in both the third and fourth claims is the closed combustion-chamber formed, in part by a circular flange extending outward and closing on the top of the fire-pot, with perforations in it, or ears for connection with the downward flues, or it is those perforations or ears leading out of such a chamber to the descending passages. These devices the defendants do not employ, and they cannot be used in the defendants' stove. There has been, therefore, no infringement of these claims.

The fifth claim is the only remaining one contained in the re-issue which the defendants are alleged to have invaded. It is con-

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structing the fire-pot of a base-burning stove with an imperforated circumference and in the form of a trumpet mouth at its upper extremity, in combination with descending flame passages, substantially as described, and for the purposes set forth. How in combination? As described in the specification, united by means of perforated flanges or ears of the pot, involving, of course, the presence of a closed combustion-chamber constructed substantially as already described. Construing the claim thus, as we think it must be construed, the defendants have been guilty of no infringement.

Passing now to the second patent, issued August 11th, 1863, we observe that its first claim was for a combination of the illumination openings, flame-expansion chamber, coal-supply reservoir, fire-pot, descending-flue and draft-flue, substantially in the manner and for the purpose described. In the main this is the same combination as that claimed in the reissued patent we have had under consideration. The only change is the addition of illumination openings. These were a well-known device applied to stoves long before either of the patents were granted. They perform no peculiar office in the new combination. They have no possible relation to it. They do not affect, in the slightest degree, the results of that combination, whatever they may be. It is impossible to regard the mere addition of such openings to a stove containing the improvements described in the reissued patent as the formation of a new patentable combination. It is not invention. If, however, it were, the defendants have not trespassed upon it, for of the combination the peculiarly formed close expansion chamber is an essential constituent, and that is not found in the defendants' stove.

Similar remarks might be made respecting the second claim of the patent of August, the only remaining one alleged to have been infringed. All the elements of the combination have not been used by the defendants.

DECREE AFFIRMED.

This case was argued before the CHIEF JUSTICE took his seat, and he did not participate in the judgment.

RUBBER-TIP PENCIL COMPANY v. HOWARD.

(20 Wallace, 498.)

Though an idea of a person who afterwards obtains a patent for a device to give his idea effect may be a good idea, yet if the device is not new his patent is void, even though it be useful. The principle applied to the patent of J. B. Blair, of

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July 23d, 1867, for a new manufacture, being rubber heads for lead-pencils, and the patent held void as being for nothing more than making a hole smaller than the pencil in a piece of India-rubber and putting the pencil in the hole, the elastic and erasive qualities of India-rubber being known to every one, and every one possessing capacity to make a hole in a piece of rubber, and to put a pencil in the hole, so as to be held there for an eraser by the elasticity of the rubber.

ERROR to the Circuit Court for the Southern District of New York; the case being thus:

On the 23d of July, 1867, J. B. Blair, an artist, alleging himself to be the original and first inventor of "a new and useful rubber head for lead-pencils," received a patent for his invention. His specification and claim were as follows:

"Be it known that I, J. B. Blair, of the city of Philadelphia, &c., have invented a new and useful cap or rubber head to be applied to lead-pencils, &c., for the purpose of rubbing out pencil-marks; and I do hereby declare the same to be fully described in the following specifications and represented in the accompanying drawings, of which—

"Figure 1 is an external view of a pencil as provided with a rubber or elastic erasive head, constructed in accordance with my invention.

"Figure 2 is a longitudinal section of the same.

"Figure 3 shows the head, as made, in a somewhat modified form, or with its upper end terminating in a cone.

"The nature of my invention is to be found in a new and useful or improved rubber or erasive head for lead-pencils, &c., and consists in making the said head of any convenient external form, and forming a socket longitudinally in the same to receive one end of a lead-pencil or a tenon extending from it.

"In the said drawings, A denotes a lead-pencil, and B one of my erasive heads applied thereto. The said head may have a flat top surface, or its top may be of a semicircular or conical shape, or any other that may be desirable. Within one end of the said head I form a cylindrical or other proper-shaped cavity. This socket I usually make about two thirds through the head, and axially thereof; but, if desirable, the socket or bore may extend entirely through the said head. The diameter of the socket should be a very little smaller than that of the pencil to be inserted in it. The elastic erasive head so made is to fit upon a lead-pencil at or near one end thereof, and to be so made as to surround the part on which it is to be placed, and be held thereon by the inherent elasticity of the material of which the head may be composed. The said head is to be composed of India-rubber, or India-rubber and

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some other material which will increase the erasive properties of the head.



FIG. 3

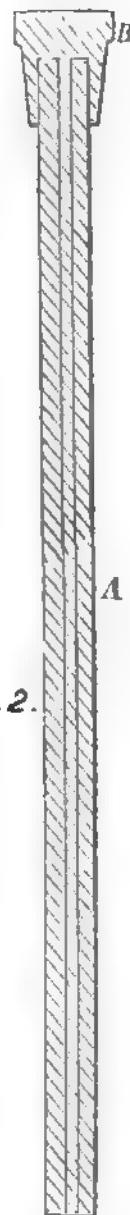


FIG. 2.



FIG. 1.

"The drawings exhibit the elastic head so made as to cover the end as well as to extend around the cylindric sides of the pencil, but it is evident that the contour of the said head may be varied to

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suit the fancy or the taste of an artist or other person; and I do not limit my invention to the precise forms shown in the drawings, as it may have such or any other convenient for the purpose, so long as it is made so as to encompass the pencil and present an erasive surface about the sides of the same.

"A head made in my improved manner and applied to a pencil as above set forth is of great practical utility and advantage to bookkeepers, accountants, and various other persons. The pointed form of the head, as shown in Figure 3, will be found very useful for draughtsmen in erasing lines from their drawings when it may be desirable not to erase other lines in close proximity to that which it is desirable to erase. The elastic or rubber pencil-head, made as above set forth, may be applied not only to lead-pencils, but to ink-erasers and other articles of like character.

"I claim as a new article of manufacture an elastic erasive pencil-head, made substantially in manner as described.

"J. B. BLAIR."

This patent having become the property of the Rubber-Tip Pencil Company, and one Howard having made, as the company alleged, rubber-tipped pencils like those covered by the patent, the company filed a bill to enjoin him, &c.

He set up, among other defenses, that the article of manufacture claimed as an invention was not patentable as such.

And of this view was the court below. It construed the invention claimed to be "broadly any form which would enable the rubber to encompass a pencil, ink-eraser, or other articles of like character." It said that the additional words, "and present an erasive surface about the sides of the same," added nothing to the description, because "it was impossible to have a piece of rubber encompass a pencil, ink-eraser, or other article of similar character, without presenting an erasive surface about the sides of the same."

It said further, that the article was not the subject of a patent, because the elastic and erasive properties of India rubber were known to all; "and that no person knowing the elastic quality of rubber could be wanting in the knowledge that a piece of rubber could be made to encompass and adhere to a pencil by making a hole in it; nor could any one be deficient in the skill requisite to make such a hole."

From a decree accordingly the company took this appeal.

Mr. J. S. Washburn, for the appellant:

1. The construction by the court below of the specification and claim is *illiberal* and contrary to the just rule laid down in many

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cases in this court, including especially a recent one, that patents for invention are to receive a liberal interpretation, and are, if practicable, to be so construed as to uphold and not destroy the right of the inventor. *Klein v. Russell*, 19 Wallace, 433.

There exists in the present case no necessity which compels an illiberal construction. Indeed, such construction can be sustained only by rejecting the substantial effect of the language of the specification, as explained by the drawings.

The claim is for "an elastic, erasive pencil head, made *substantially in manner described*." The claim immediately following the description of the invention must be construed in connection with the explanations contained in the specifications. *Seymour v. Osborne*, 11 Wallace, 547.

Now, the specification describes the invention as an "improved" rubber, or erasive head for lead pencils, and shown in the specification and *drawings* to be a *solid, elastic, socketed, erasive head*, "so made as to fit upon a lead pencil at or near the end thereof, and to be so made as to surround the part on which it is to be placed, and to be held thereon by the inherent elasticity of the material of which the head may be composed," and having the *projecting, working, erasive surfaces* shown in the drawings, which it is stated are "constructed in accordance with my invention," and by which drawings the invention is stated to be "represented."

It is true that the specification says—

"The drawings exhibit the elastic head, so made as to *cover the end* as well as to extend around the cylindric sides of the pencil, but it is evident that the *contour* of said head may be varied to suit the fancy or the taste of an artist or other person; and I do not limit my invention to the *precise* forms shown in the drawings, as it may have such, or any other *convenient for the purpose*, so long as it is made so as to encompass the pencil, and present an erasive surface about the sides of the same."

And from this language the court below assumed that the head might be of *any* external form whatever, so long as it encompasses the pencil, and that the words "and present an erasive surface about the sides of the same" were without any meaning.

But this is a misconception. The language relied on by the court below, and above quoted, should be taken in connection with the language preceding:

"The said head may have a flat *top* surface, or its *top* may be of a semicircular or conical shape, or any other that may be desira-

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ble. Within one end of the said head I form a cylindrical or other proper-shaped cavity. This socket I usually make about two-thirds through the head, and axially thereof; but, if desirable, the socket or bore may extend entirely through the said head."

The statement in the first above-quoted paragraph, that the *contour* may be varied, and that the inventor does not limit himself to the "*precise*" forms shown in the drawings, is made with reference to the "*end*" of the pencil being covered or uncovered, and is subject to the express condition that the forms shall be "*convenient for the purpose*," and the implied condition to be fairly derived from the use of the word "*precise*," that they *must* correspond *substantially* with the *drawings*. There is certainly nothing from which it can be fairly derived that he intended to *disclaim* the features which are clearly portrayed in the drawings, upon which its practical value as an eraser depends; and the use of the words "*to suit the fancy or the taste of an artist or other person*," confines the meaning of the inventor to a matter of *simple style*, and indicates that he does not limit himself to a precise contour as a matter of ornamental configuration. This is further indicated by the fact that, in the drawings, while the *top* of the head is varied and the *contour* of the projecting erasive working surfaces about the sides may be varied from hexagon to square or circular, the projecting, working surfaces themselves are always retained.

It is also evident from the context that the words "*and present an erasive surface about the sides of the same*" mean *such* erasive surface as is portrayed in the drawings, and as is "*convenient for the purpose*."

The court below therefore disregarded the drawings. But it is well settled that the drawings constitute a part of the specification, and are to be resorted to to aid a specification, which would otherwise be imperfect; to help out the description; to furnish clearer information respecting the invention described in the specification; to show the nature, character, and extent of the claim, as well as make a *part* of the description; and to *add* anything to the specification which is not specifically contained or mentioned therein. *Earl v. Sawyer*, 4 Massachusetts, 9; *Burrall v. Jewett*, 2 Paige, 143; *Washburn v. Gould*, 3 Story, 133, 138, 139; *Emerson v. Hogg*, 2 Blatchford, 9; *Hogg v. Emerson*, 6 Howard, 485; 11 Id., 606.

The fact that the construction placed upon the language in the present case is inconsistent with what the drawings establish, is enough to show it to be a misconstruction.

2. There are certain leading facts, known to everybody, which

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answer the concluding remarks of the court below, and are of themselves enough to decide this case.

Lead pencils have very long—longer than any living man remembers—been used to make marks. India-rubber has very long—longer than any living man remembers—been used to rub them out. But never until lately was India-rubber used for this purpose except in a form disconnected from the pencil. But on a summer's morning of 1867, one Blair, a poor artist of Philadelphia, seeing that it will be more convenient to use it *on* his pencil than off, puts in a certain way, a piece of a certain shape, *on* the pencil, and finding a great advantage in thus using such a piece, shows what he has done. Behold ! thousands, hundreds of thousands, and millions of rubber-tipped pencils at once appear. Very rich companies, like the Rubber-Tip Pencil Company, are incorporated. Great capital is invested in the matter, and rubber-tipped pencils become a manufacture of the nation. How can it be said that there is no invention here? So far as the patent laws are concerned, *utility*, as ascertained by the consequences of what is done, is the test of invention, and when utility is proved to exist in any great degree, a sufficiency of invention to support the patent must be presumed. *Roberts v. Dickey*, Circuit Court of the United States, Western District of Pennsylvania, per Strong, J., and McKennan, circuit judge, 1 Official Gazette, 4, 5, 6 ; and see *McCormick v. Seymour*, 2 Blatchford, 243 ; and Curtis on Patents, § 41. In such a case it is vain to talk about the small amount of ingenuity shown, or to say that the arrangement and application are so simple and obvious that anybody could see them.

Messrs. F. W. Betts and S. W. Kellogg, contra.

The CHIEF JUSTICE delivered the opinion of the court.

The question which naturally presents itself for consideration at the outset of this inquiry is, whether the new article of manufacture, claimed as an invention, was patentable as such. If not, there is an end of the case and we need not go further.

A patent may be obtained for a new or useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof. In this case, as has been seen, Blair's patent was for "a new manufacture," being a new and useful rubber head for lead-pencils. It was not for the combination of the head with the pencil, but for a head to be attached to a pencil or something else of like character. It becomes necessary, therefore, to examine the description which the patentee has given of his new article of man-

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ufacture, and determine what it is, and whether it was properly the subject of a patent.

It is to be made of rubber or rubber and some other material which will increase its erasive properties. This part of the invention alone could not have been patented. Rubber had long been known, and so had rubber combined with other substances to increase its naturally erasive qualities.

It is to be of any convenient external form. It may have a flat-top surface, or its top may be of a semicircular or conical shape, or any other that may be desirable. This would seem to indicate clearly that the external form was not a part of the invention. It was, however, urged upon the argument, that the invention did consist in the projecting surfaces extending out from the head, and which appear, as is claimed, in the drawings attached to the specifications. It is true, that in two out of the three drawings projecting surfaces are indicated, but such is not beyond question the case with the third. The shape there shown is conical, extending to a point, and evidently intended to represent the form mentioned as specially adapted to the use of draughtsmen in erasing lines from their drawings. It was the end of such a pencil, not the sides, that was to furnish the particular advantage of form. But although drawings do accompany the specification and are referred to, it is evident that this reference is for the purpose of illustration only, because the patentee is careful to say that "he does not limit his invention to the precise forms shown, as it may have such or any other convenient for the purpose, so long as it is made so as to encompass the pencil and present an erasive surface upon the sides of the same." Certainly words could hardly have been chosen to indicate more clearly that a patent was not asked for the external form, and it is very evident that the essential element of the invention as understood by the patentee was the facility provided for attaching the head to the pencil. The prominent idea in the mind of the inventor clearly was the form of the attachment, not of the head. If additional proof of this is required, it may be found in the further statement in the specifications, which locates the head for use at *or near* the end of the pencil, and so made as to surround the part on which it is to be placed and be held thereon by the inherent elasticity of the material of which it is to be composed. If intended for use at any other place than on the end of the pencil, the projections could not be essential, as any form that would surround the part would present the requisite erasive surface.

Again, the head is to have in it longitudinally, a socket to receive one end of a lead-pencil or a tenon extending from it. This

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socket is to be cylindrical or of any other proper shape. Usually, the inventor says, he made it so as to extend part way through the head, but if desirable, it might be extended entirely through. It must be within one end, but any particular location at the end is not made essential. This clearly is no more than providing that the piece of rubber to be used must have an opening leading from one end into or through it. This opening may be of any form and of any extent longitudinally. The form, therefore, of the inside cavity is no more the subject of the patent than the external shape. Any piece of rubber with a hole in it is all that is required thus far to meet the calls of the specifications, and thus far there is nothing new, therefore, in the invention. Both the outside and inside may be made of any form which will accommodate the parties desiring the use.

But the cavity must be made smaller than the pencil and so constructed as to encompass its sides and be held thereon by the inherent elasticity of the rubber. This adds nothing to the patentable character of the invention. Everybody knew, when the patent was applied for, that if a solid substance was inserted into a cavity in a piece of rubber smaller than itself, the rubber would cling to it. The small opening in the piece of rubber not limited in form or shape, was not patentable, neither was the elasticity of the rubber. What, therefore, is left for this patentee but the idea that if a pencil is inserted into a cavity in a piece of rubber smaller than itself the rubber will attach itself to the pencil, and when so attached become convenient for use as an eraser?

An idea of itself is not patentable, but a new device by which it may be made practically useful is. The idea of this patentee was a good one, but his device to give it effect, though useful, was not new. Consequently he took nothing by his patent.

The decree of the Circuit Court is

AFFIRMED.

AMBLER v. WHIPPLE.

(20 Wallace, 546.)

1. Where an instrument prepared by one partner for signature by his copartner, with whom he has fallen out and quarrelled, contains mutual releases and assignments —each being the consideration of the other—it should, in order to be binding, be signed by both parties. The fact that the partner who did not prepare it has taken without objection from the other an unsigned counterpart after this other partner had signed the first counterpart, and left it in the hands of a third person

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- to be delivered only when the unsigned counterpart was signed and delivered, does not give effect to the release.
2. Though bad character, drunkenness, and dishonesty on the part of one partner may be good grounds for dissolving a partnership, on the application of the other—this other not having known at the time of forming the partnership, these characteristics of his copartner—yet when *before* the partnership was formed they were known by the partner not guilty of them to have existed, they do not authorize such partner himself to treat the partnership as ended, and to take to himself all the benefits of the joint labor and joint property.
 3. A partner who furnished capital, charged in a case strongly indicating injustice, with half profits in favor of another of inventive genius, and whom after valuable discoveries he sought to get rid of, alleging, even with truth, intemperate habits and bad character.

APPEAL from the Supreme Court of the District of Columbia.

Ambler filed a bill in the court just named against one Whipple and a certain Dickerson. A cross-bill and a supplemental bill, made additional pleadings.

The suit grew out of a copartnership between Ambler and Whipple, formed May 24th, 1869, for the purpose of experimenting with and bringing to perfection an invention by which gas, for lighting and heating and other useful purposes, was to be generated from petroleum; for obtaining a patent or patents for the result of their labor, and for the management of the business after such patent had been obtained.

The terms of the partnership were clearly stated in a memorandum of agreement signed by the parties, consisting of nine articles.

It sufficiently appeared from these articles that Ambler was looked upon as the man of inventive genius, and Whipple as the man of business, and the source of the funds necessary to conduct the experiments and place the affair on a successful footing.

By these articles it was agreed that if success attended their efforts the profits were to be equally divided, after deducting the expenditures which Whipple might find necessary to be advanced. That Whipple might have full control of his branch of the joint venture, it was stipulated that Ambler should assign to him his interest in the patents which might issue, and in pursuance of this stipulation Ambler did execute an assignment of all his interest in the invention and in the patents which might be granted thereon. The articles of partnership were dated on the day when the partnership was formed, May 24th, 1869, and the assignment the day after.

In view of the present controversy the most important of these articles of agreement was the SIXTH, which was in the words following:

“That any and all letters patent that may be obtained in this

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country and all other countries by virtue of said invention, or by reason of any improvement, or of any modification of the same by either party, shall be owned by and between the parties to this agreement in equal shares, to wit, one undivided half to each, and all proceeds of sale or sales of any and every kind and character shall be shared by and between the parties share and share alike."

The bill alleged that after experimenting three or four months a result was obtained and a patent issued in the name of Whipple and Ambler, No. 92,687, dated July 18th, 1869, and that while the patentees were experimenting under this patent and seeking remedies for apparent defects and for improvements in their invention, the true principle of success was developed about the 20th or 21st day of August; that immediately thereafter the defendant, Whipple, conceived the design of excluding the complainant from any benefit of the invention, and began a course of proceedings for the purpose of defrauding him of his rights; that in pursuance of this scheme he ignored his rights and character as a joint owner and patentee in the invention; forcibly debarred him from the workshops where his invention was used, and denied him all interest in the result of his labors, and introduced the other defendant, Dickerson, in the absence of the complainant, to the place where the experiments had been made and to the machinery which had been used, and that in a few days Dickerson applied for a patent, afterwards issued (No. 95,665,) which embodied the invention of Ambler, with only a colorable variation; that thereafter Whipple and Dickerson entered into a copartnership and successfully introduced the invention of the complainant into use, and by sales of particular States and districts had received in a short time over \$100,000.

This was the substance of the bill of complaint, and the relief prayed was that Whipple and Dickerson might make discovery of the sales and profits; that they should be enjoined from the use of the complainant's invention, and that a decree be made in favor of the complainant for compensation and damages.

The answer of Whipple admitted the original agreement and assignment, and the issue of the patent to Whipple and Ambler. It admitted also the partnership with Dickerson and the issue of the patent to Dickerson. It denied all intent to defraud the complainant, but admitted the sales or contracts for sale of the Dickerson patent. It denied the identity of the two patents or the inventions set forth in them. It averred that after a full experiment with the first patent it proved a total failure, and that the

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complainant abandoned all further effort with it and left the city of Washington, where the experiments had been conducted; that Dickerson, having been previously engaged in inquiries in the same direction, perfected an invention of great value which effected what he and Ambler had failed to do, and that he thereupon entered into a partnership with Dickerson in regard to that invention, as he had a right to do, and that in the sales, contracts, or profits growing out of this patent, the complainant had no interest whatever.

The answer set up as a further defense that the complainant by his drunkenness, dishonesty, and general bad repute had rendered a continuance of the partnership impossible; and that through one Martin the defendant Whipple had purchased of Ambler all his interest in the patent of Whipple and Ambler, and in the partnership business in which they had been engaged. It also contained allegations of the fact that before the partnership began, the complainant had been convicted of a felony and was otherwise infamous, but neither in the answer nor in the cross-bill, where this matter was repeated, *was it stated that this fact came to the knowledge of Whipple, the defendant, after he had entered into the partnership.* It did not deny the allegation of the bill, that after the date specified in it the complainant had been excluded from the workshops.

The cross-bill filed by the defendant Whipple set up a release of Ambler, his improper conduct, the failure of the experiments with the original invention, and prayed that Ambler be enjoined from setting up any right or claim against him on account of said invention, or on account of the articles of agreement between them. To this Ambler answered, very fully denying the release and denying the failure of the invention and his abandonment of it.

Dickerson filed a separate answer, but it contained nothing of moment not included in Whipple's.

The supplemental bill averred that since the filing of the original bill an additional patent (No. 102,662) had issued to the defendants; that it was for the same invention, essentially as that made by Whipple and Ambler, and patented to them by patent No. 92,687.

The answer to this bill denied this, and asserted that the invention patented was one of Whipple and Dickerson.

The testimony occupied a large part of a record of four hundred and eighteen pages, and was contradictory. Notwithstanding its amount, however, some matters necessary to the best comprehension of the case in all its parts were not presented. Thus, though

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the pleadings referred largely to the patent to Whipple and Ambler (No. 92,687) and to that one (No. 102,662) to Whipple and Dickerson, mentioned in the supplemental bill as having been granted, during the suit, and though the complainant alleged that the latter was for the same invention, with colorable differences, as the former, yet neither was set out in the evidence. Certain leading facts, however, were made sufficiently clear.

Thus the evidence tended plainly to show that after the grant of the patent of July 18th, 1869, (No. 92,687,) a series of experiments were conducted through a term of three months, by Whipple and Ambler, in the same place and under their joint supervision, which finally resulted in the discovery of the important and before unknown principle, that the mingled vapors of water and petroleum, when held together at the temperature and under the pressure due to steam, would result in the production of a combustible gas, if such combination was continued long enough to enable the chemical reunion to take place. This discovery would seem to have been developed empirically, and apparently was not demonstrated in confirmation of an antecedent theory. In the first experiment of the partners, upon a practical scale, the endeavor was made to make a gas from the vapor of petroleum, evaporated by heat applied on the outside of a cylinder containing petroleum and fitted with a piston-head to force the gas, when evolved, through strainers of various porous materials placed above the cylinder. This piston-head was very loosely fitted, and steam entered the petroleum and became mingled with its vapor. After the machine for this purpose was made, it was soon observed, in experimenting with it, that while it made gas with a loose-fitting piston, it made little or none when the piston was fitted tightly, *i. e.*, packed, so as to be steam-tight. This led to the conclusion that the introduction of steam into the oil itself was essential to the proper development of gas in quantities practically sufficient, and a hole was then bored in the cylinder, allowing a free flow of steam through the petroleum, when of a sudden the invention appeared to be complete. Whipple said to a workman, "I am satisfied with it. There is a million of dollars in it."

There was some conflict of testimony as to the precise time at which, and the persons by whose orders, this boring of the piston was done. Four witnesses, including Ambler and his son, stated that it was by direction of Ambler. Three (Whipple and two persons still in his employ) stated that it was by direction of Whipple.

The decisive experiment just above mentioned was made about the 21st of August, 1869.

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There were now certain *undisputed* facts in the case; facts referred to by this court, in its opinion, as such. (*Infra*, pp. 676, 677.) They were these:

"The book of accounts of expenditures made by Whipple and kept under his direction showed that up to that date Whipple and Ambler's names had been used in charging up the items. On the 23d Ambler's name was dropped and it was all charged to Whipple. Many declarations of his were proved about this time, that he would make a great fortune; and it was proved by one Holden, with whom Ambler had been boarding, that up to this time Whipple had paid for Ambler's board without objection, but shortly after gave him, Holden, notice that he would do so no longer. It appeared from Dickerson's supplemental and amended answer that in the months of June and July Whipple was in Chicago and tried to interest him in the matter in which he and Ambler were engaged. It was also shown that on the 3d of September, within less than two weeks after the purpose of Whipple to get rid of Ambler was alleged to have been fully conceived, Dickerson, who was not a man of science, but a person having money, made his appearance in Washington, coming from Chicago, and was taken by Whipple to the shop where the recent experiment had been made. This was in the absence of Ambler from the city. Precisely what took place between Whipple and Dickerson was not shown by the testimony. *That* was to be judged of by the results which followed.

"The first of these was that, on the 16th day of September, only thirteen days after his first sight of the machinery in the workshops, and his first interview in Washington with Whipple, Mr. Dickerson filed in the Patent Office an application for a patent, the specification and claims of which were so nearly like those of Ambler and Whipple, and so nearly embodied the results of their experiments, as to leave little doubt that it originated in the Whipple-Ambler experiments, however much it might differ in some particulars from their patent. This application was pressed so successfully that a patent was issued on it to Dickerson and Whipple on the 12th of October. In the meantime Dickerson and Whipple had entered into a partnership in the matter, and Ambler was excluded from all control."

These facts, as already said, were undisputed, and there was much other testimony of a direct character tending to prove the purpose of Whipple to put Ambler wholly aside and out of the way, and that with this purpose he went after Dickerson, an old ac-

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quaintance of his own, and that with this purpose Dickerson came to Washington.

The testimony was voluminous. The whole case involving chiefly questions of intent and of fact, and thus ministering no great deal anywhere to juridical science, the *results* of it, as they appeared to the Reporter and as they were assumed by the court, are alone given.

It appeared sufficiently plain that Ambler was a man of intemperate habits, not at all constantly affected by liquor, but getting into drunken debauches from time to time, and, when in that state especially, given to lying and to various degraded habits. The evidence showed, however, that Whipple had known him since 1864, five years before the partnership between him and Ambler was formed, and that the habits were generally known; known in fact by almost everybody who knew Ambler at all. They knew him to be a man of genius, with both the weaknesses and the vices in a full measure by which genius is sometimes disfigured. During a part of the month of August it seemed that he left Washington for eight or ten days. When he came home Whipple would not allow him to enter the workshops.

A principal defense of the defendants was the alleged release by Ambler.

The original of the alleged release was in the possession of a person named Martin, already referred to. It was dated September 24th, 1869.

It recited the issuing of the patent No. 92,687, the assignment of it to Whipple, the articles of partnership, and that a disagreement existed between Ambler and Whipple in regard to the construction of the invention; that Ambler was anxious to be released from his obligations to Whipple, and was willing to convey all his interest in the invention to Whipple, and then declared that in consideration of the full discharge of \$1,000 due by Ambler to Whipple, Ambler sold and conveyed all his interest in the invention, and in all improvements made, or which might be made by Whipple; and that Whipple released Ambler from all obligation on account of the contract, and from the payment of the \$1,000.

Martin stated that he had got the paper from Whipple at the request of Ambler; that the paper was drawn by him, Martin, at Whipple's request, and signed by Whipple on the 24th of September, 1869, the day of its date; that after getting the paper he could not find Ambler for some time, though he had called at his lodgings and written a letter, &c. However, on the 24th of October he saw Ambler. The witness proceeded:

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"Ambler introduced the subject of the release from Whipple to him, and stated that his wife objected to his signing it, and said he ought to hold on: 'But,' said he, 'I differ in opinion with her, and I will sign the agreement.' . . . I handed Mr. Ambler the original of the contract, in my own writing, which was signed by Mr. Whipple and witnessed by Mr. Lombard and myself and he read the same. I then handed him the duplicate copy, which was to be signed by himself. He made no objection to the contract, put the duplicate in his pocket, said he would take it with him to Washington, would there execute it and hand it to Mr. Whipple, and that I might deliver the original to him after he delivered the copy. I still hold the original of said contract for Mr. Ambler; will deliver it to him as soon as the duplicate is signed and delivered to myself or Mr. Whipple. I would not give Mr. Ambler the original because signed by Mr. Whipple; and I was instructed not to give it to him until the other was signed. I tendered it to him on Sunday, October 24th, at his rooms at his hotel."

The testimony of Martin showed that he had undertaken, in his conversations with Ambler and while negotiations were going on about the arrangement set out in the paper dated 24th of September, 1869, and signed by Whipple but not by Ambler, to engage that Whipple should release the \$1,000 recited in the paper as having been due by Ambler to Whipple, and that Whipple did afterwards release the said \$1,000.

The witness gave a very disparaging account of Ambler's early and long continued habits of intemperance, and of the great efforts which he had made to reform him. He testified also to his conviction for crime, though it appeared that after his discharge from prison the witness took an interest with him in a patent, offered by Ambler to him by way of gratitude.

The following, with similar testimony, much too long to be set out in a case involving chiefly questions of fact, was relied on to show that Martin was really the agent of Whipple:

"QUESTION. What time did you first make Mr. Whipple's acquaintance?

"ANSWER. In the spring of 1864.

"QUESTION. Had you a great deal to do with Whipple?

"ANSWER. Yes, sir.

"QUESTION. As much mixed with him as with Ambler?

"ANSWER. No, sir; not quite. It was a different kind of mixing.

"QUESTION. You said that in the course of conversation with Ambler, you agreed that Whipple should discharge him?

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"ANSWER. Yes, sir."

Ambler was indebted, it seemed, to the witness.

Ambler's own account of the matter was:

"On the 24th of October, 1869, I met Mr. Martin, and he told me that he had prepared an assignment of my interest to Mr. Whipple for, he said, a part consideration of \$1,000. I took the assignment and looked at it. Said I, 'Shall I take this with me?' He replied, 'Yes, if you choose.' 'I do not wish,' said he, 'to press this case upon you at all; exercise your own judgment.' Said I, 'Mr. Martin, I will take it to Washington and show it to my wife.' I did not say, nor intimate, that I would sign it."

The court below dismissed the bill and the complainant took this appeal.

Messrs. G. W. Paschal and R. Mason, for the appellant; Mr. J. A. Ballestier, contra.

Mr. Justice MILLER delivered the opinion of the court.

It is to be observed that neither party prays for a dissolution of the partnership. Indeed, the bill and cross-bill, and the answers to both, proceed upon principles which do not recognize the partnership as existing. The complainant seems to imply that by reason of Whipple's course of conduct he is remitted to all his rights as the inventor, and claims that being the sole inventor of the successful machine he is entitled to all the benefit of it. Whipple assumes that by his purchase from Ambler, and Ambler's misconduct, that the partnership has been dissolved, and he has succeeded to all its rights, if they are of any value.

The testimony is voluminous and contradictory. In the view we shall take of the case, while the decision will mainly turn on these questions of fact, we shall only state the effect which the testimony has had upon our minds without reference to it in detail.

1. If the complainant really released or sold his interest in the partnership business, or in the patent of Whipple and Ambler, his case is at an end, and we will, therefore, consider that question first.

The instrument of writing dated September 24th, 1869, is supposed to have that effect. There is no doubt that the language of the instrument (quoted *supra*, p. 672—REP.) is sufficient for the purpose for which it was intended, but it wants the signature of Ambler. Nor is it pretended that he ever signed it or any copy of it. It is clearly on its face a paper which requires the signature of

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both parties to made it binding on either. The releases and assignments are mutual, and each is the consideration of the other, and it requires no great penetration to see that it was drawn in the interest of Whipple, who signed it, and not in the interest of Ambler, who did not sign it.

But it is argued that the paper was procured from Whipple by Martin, the agent of Ambler, at Ambler's request, and was signed by Whipple and delivered to Martin; that Martin delivered it to Ambler, who received a copy of it without objection, and promised to sign it. Admitting all this to be true, it is very clear that both parties intended to have a written instrument signed by each as the evidence of any contract they might make on that subject, and neither considered any contract concluded until it was fully executed. Under these circumstances Ambler had a right to decline to sign the paper, and until he signed he was not bound by it. It was not drawn by him, nor at his dictation. It was first signed by Whipple, and drawn up by him or in his presence, and made to suit his purposes. It is idle to say that because Ambler took a copy of it from Martin to examine he became a party to it, though he never signed it.

Further, we are of opinion, notwithstanding Martin's declaration that he acted on Ambler's suggestion, that he was throughout the whole affair acting for Whipple, and governed solely by his interest. This transaction does not, in our opinion, establish any release or transfer of Ambler's interest in the partnership concern.

2. Nor is there any such evidence of abandonment of the enterprise on the part of Ambler as to justify the court in holding that he had lost or forfeited his rights in the venture. It is true that about the middle of August he left Washington city for a week or two, but when he returned he found himself excluded from the workshops and from all participation in Whipple's plans, and it seems probable he was by Whipple's authority forbidden to go there before he left the city. It is unreasonable to call this a voluntary abandonment of the enterprise.

3. What weight would be given to the charges of bad character, drunkenness, and dishonesty in a suit by Whipple to dissolve the partnership we need not here state. If all that is charged were proved in such a suit it would make a strong case for relief, on such terms as equity might impose for the protection of both parties. But they did not authorize Whipple, of his own motion, to treat the partnership as ended and take to himself all the benefits of their joint labors and joint property. It seems also to be a fair inference from the pleadings and other circumstances that Whipple must

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have known of Ambler's conviction for felony *before* he entered into the agreement with him.

We are, therefore, of opinion that the case shows nothing which deprives Ambler of his rights under the original contract with Whipple.

4. We are also of opinion that Whipple is chargeable as trustee for Ambler with one-half of all that has been realized or may be realized from the use of the patent to Whipple and Ambler and the patent to Whipple and Dickerson.

This conclusion we rest upon the sixth article of the agreement between Whipple and Ambler. (Quoted *supra*, p. 667—REP.) This article provides that any improvement or modification of the invention which may be made by either party, in this country or any other, for which a patent may be obtained, shall enure to the joint benefit of both. In the peculiarly close and confidential relation which the parties assumed toward each other in regard to an invention which both understood to be imperfect, undeveloped, and the subject of future trial and experiment, this provision was eminently wise and necessary. And since Whipple was, by the assignment of Ambler, invested with the legal title of the patent and chief conduct of the affairs of the partnership, he was under a peculiar obligation of good faith as both partner and trustee of Ambler.

Notwithstanding the bills, cross-bills, and supplemental bills set up both by the patent to Whipple and Ambler and the patent to Whipple and Dickerson, No. 95,665, and another issued to them pending the suit, No. 102,662, which are charged by Ambler to be all covered by his invention, and by the others to be totally distinct, none of these patents are found in the record. It is impossible, therefore, for this court to give any *conclusive* opinion or judgment as to how far they are identical, or how far there may be distinctive features, under which the whole or some part of the two latter patents might be sustained. We base our decree on other principles.

We are satisfied, from the testimony in the case, that the results of the experiments conducted by Ambler and Whipple in their joint enterprise developed the practicability of success in obtaining the object of their pursuit; that these experiments disclosed the fact that while they had mainly relied on the effect of heat by steam, applied to petroleum indirectly by encompassing the vessel in which the petroleum was, by the steam let into an outer chamber, it was found that it was necessary to introduce the steam into the vessel, thus bringing it into direct contact with the petroleum.

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Whether Ambler had seen this as clearly as Whipple is not very well or satisfactorily shown. But it is proved to our entire satisfaction that when Whipple saw this point, and that through it success was within his reach, he immediately recognized its great value. This experiment was made at the same shops, with the same machines, and in the same pursuit, which for three months had engaged the active energies of both Ambler and Whipple. The weight of evidence is that Ambler was present and assisting, but this is denied by other witnesses.

What is clear to us is that as soon as Whipple recognized the value of this discovery he made up his mind to be rid of Ambler.

The undisputed facts of the case, (see them set out, *supra*, p. 671—REP.,) taken in connection with much other testimony of a direct character, convince us that Whipple, in violation of his trust to Ambler, and in fraud of his rights, deliberately entered upon a scheme by which Ambler was to be deprived of the benefits resulting from success in their joint experiments. That in pursuit of this scheme he called in Dickerson, who, without having invented anything, and in a remarkably short space of time, procured letters-patent to issue to himself and Whipple which embraced the results of Ambler's discoveries and experiments, whether they embraced anything else or not.

For all that has come to Whipple's hands, for all that is included in the patents to him and Dickerson, he is under the terms of the sixth article of the agreement, a trustee for Ambler to the extent of one-half, and must be so charged and held to account in this proceeding.

As to Dickerson, while he is not a trustee under that article, we are of opinion that he has so far knowingly connected himself with and aided in the fraud on Ambler that he cannot resist Ambler's right to an undivided half of both the patents to Dickerson and Whipple, and of the profits made or to be made out of them. What rights or remedies he may have against Whipple we do not decide.

The result of these views is that the decree of the Supreme Court of the District must be reversed; that a decree must be entered in that court declaring Whipple and Dickerson to hold in trust for the benefit of Ambler to the extent of one-half the two patents issued to them, mentioned in the pleadings as 95,665 and 102,662; that an accounting be had as to the profits realized by them, or either of them, from the use or sale, or otherwise, arising from said patents, and for such other and further proceedings as may be

IN CONFORMITY TO THIS OPINION.



TABLE OF CASES

RELATING TO

LETTERS PATENT FOR INVENTIONS, COPYRIGHTS, AND TRADE
MARKS, WHICH HAVE BEEN CITED, AFFIRMED, APPROVED,
EXPLAINED, DOUBTED, DISAPPROVED, OVER-
RULED, OR REVERSED.

Note. The references to Curtis on Patents and Browne on Trade Marks are to the sections.

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- Agawam Company v. Jordan**, 7 Wall. 583. *Cited*, 8 Wall. 427; 10 id. 122; 11 id. 539; 19 id. 390; 4 Fish. Pat. Cas. 228, 258; 6 id. 363, 365, 366; Curtis on Patents, 87a, 119a, 389a.
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- Allen v. Blunt**, 2 Woodb. & M. 121; S. C., 2 Robb, 530. *See* 1 Wall. Jr. 161; 13 How. 372. *Cited*, 2 Woodb. & M. 71; 3 id. 61, 129, 178, 276, 352; 1 Fish. Pat. Cas. 74; 4 id. 556; 6 id. 538.
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- Allen v. Hunter**, 6 McLean, 303. *Cited*, 3 Fish. Pat. Cas. 230.
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- American Pin Co. v. Oakville Co.**, 3 Blatchf. 190. *Cited*, 2 Fish. Pat. Cas. 497; Curtis on Patents, 309.
- American Wood Paper Co. v. Fibre Disintegrating Co.**, 6 Blatchf. 27; S. C., 3 Fish. Pat. Cas. 362.
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- Ames v. Howard**, 1 Sumn. 482; S. C., 1 Robb, 689. *Cited*, 4 How. 708; 6 id. 486; 14 id. 181; 15 id. 223, 341; 11 Wall. 555; 3 Story, 8; 1 Woodb. & M 57, 59; 4 Fish. Pat. Cas. 227; 6 id. 253; Phillips on Patents, 250, 329, 367, 369, 370, 450, 451; Curtis on Patents, 21, 225, 229, 232, 249, 342, 345, 454.
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- Aultman v. Holley**, 6 Fish. Pat. Cas. 534; S. C., 11 Blatchf. 317. *Cited*, 6 Fish. Pat. Cas. 554, 560.
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- Barnard v. Gibson**, 7 How. 650. *Cited*, 2 Wall. 110; 3 Fish. Pat. Cas. 429.
- Barnes v. Straus**, 9 Blatchf. 553; S. C., 5 Fish. Pat. Cas. 531.
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- Barrows v. Knight**, 6 R. I. 434; S. C., Cox Trade Mark Cases, 238. *Cited*, 36 How. Pr. R. 16; 4 Abb. Pr. R. N. S. 415; Browne on Trade Marks, 216, 426.
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- Bell v. Daniels**, 1 Fish. Pat. Cas. 372; S. C., 1 Bond, 212. *Cited*, 3 Fish. Pat. Cas. 554, 618.
- Bell v. Locke**, 8 Paige, 75; S. C., Cox Trade Mark Cas. 11. *Cited*, 11 Paige, 297; 2 Sandf. Ch. 610; 1 Barb. Ch. 535; 4 Edw. 274; 23 Barb. 609; 7 Bosw. 225; 2 Abb. Pr. R. N. S. 462; 2 Brewster, 310; 7 Cush. 322; 4 McLean, 516; 11 Paige, 292; 2 Sandf. Ch. 603; 4 Woodb. & M. 1; Upton on Trade Marks, 93; Browne on Trade Marks, 105, 107, 550.
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- Cited**, 6 Blatchf. 438; 3 Fish. Pat. Cas. 595; Curtis on Patents, 497.
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- Goodyear v. Day**, 1 Blatchf. 565. *Cited*, 1 Cliff, 299; 4 Blatchf. 68.
- Goodyear v. Day**, 2 Wall., Jr., 283. *Cited*, 2 Cliff, 262, 365; 5 Blatchf. 141-149, 154; 1 Fish. Pat. Cas. 575, 645; 2 id. 346, 399, 505, 588; 3 id. 630; 5 id. 193; Curtis on Patents, 419, 429, 496.
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- Goodyear v. Honsinger**, 2 Biss. 1; S. C., 3 Fish. Pat. Cas. 147.
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- Goodyear v. Mullee**, 3 Fish. Pat. Cas. 209; S. C., 5 Blatchf. 429.
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- Goodyear v. Phelps**, 3 Blatchf. 91. *Cited*, 4 Blatchf. 494; 6 id. 498; 2 Fish. Pat. Cas. 183; 3 id. 595.
- Goodyear v. Providence Rubber Co.**, 2 Cliff. 351; S. C., 2 Fish. Pat. Cas. 499. *See* 2 Bond, 203; 3 Fish. Pat. Cas. 450, 513. *Affirmed*, 9 Wall. 788. *Cited*, 2 Fish. Pat. Cas. 552; 5 id. 98, 102, 105; 6 id. 351; 6 Blatchf. 354; 2 Cliff. 535; 11 Wall. 543; Curtis on Patents, 218a.
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- Gould v. Reese**, 15 Wall. 187. *Cited*, 5 Fish. Pat. Cas. 630, 631; 6 id. 341, 478, 500, 503.
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- Guilhon v. Lindo**, 9 Bosw. 605; S. C., Cox Trade Mark Cas. 295.
- Guyon v. Serrell**, 1 Blatchf. 244. *Cited*, 6 Blatchf. 105; 3 Fish. Pat. Cas. 409.
- Hailes v. Van Wormer**, 7 Blatchf. 443. *Affirmed*, 20 Wall. 342. *Cited*, 9 Blatchf. 535; 5 Fish. Pat. Cas. 42^a, 638; Curtis on Patents, 111c.
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- Hall v. Wiles**, 2 Blatchf. 194. *See* 2

- Cliff. 533. *Cited*, 10 Wall. 125; 6 Blatchf. 105, 136; 2 Cliff. 512; 2 Fish. Pat. Cas. 550; 3 id. 409; 5 id. 212; Curtis on Patents, 44, 337 note, 379.
- Hammond v. Edwards**, 1 Fish. Pat. Cas. 1. *Cited*, 8 Blatchf. 423; 9 id. 59; 3 Fish. Pat. Cas. 618; 4 id. 521.
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- Haussknecht v. Claypool**, 1 Black, 431. *Cited*, Curtis on Patents, 492a.
- Hawley v. Mitchell**, 4 Fish. Pat. Cas. 388. *Affirmed*, 16 Wall. 544. *Cited*, Curtis on Patents, 199a.
- Hayden v. Suffolk Manufacturing Co.**, 4 Fish. Pat. Cas. 87. *Affirmed*, 3 Wall. 315. *Cited*, 5 Fish. Pat. Cas. 406.
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- Hobbs v. Francis**, 19 How. Pr. R. 567; S. C., Cox Trade Mark Cas. 287. *Cited*, Browne on Trade Marks, 485.
- Hodge v. Hudson River R. R. Co.**, 6 Blatchf. 85; S. C., 3 Fish. Pat. Cas. 410. *Cited*, 4 Fish. Pat. Cas. 204; Curtis on Patents, 208a.
- Hoffheins v. Brandt**, 3 Fish. Pat. Cas. 218. *Cited*, 5 Fish. Pat. Cas. 405; Curtis on Patents, 106.
- Hoffman v. Aronson**, 8 Blatchf. 324; S. C., 4 Fish. Pat. Cas. 456.
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- Howard v. Henriques**, 3 Sandf. 725; S. C., Cox Trade Mark Cas. 129. *Cited*, 17 Barb. 609; 28 How. Pr. R. 124; 36 id. 16; 4 Abb. Pr. R. N. S. 415; 6 Robertson, 538; 7 Bosw. 230; 9 id. 199; 4 Philadelphia, 141; 21 Cal. 451; 2 Brewster, 310, 329; Upton on Trade Marks, 90; Browne on Trade Marks, 83, 92, 95, 96, 528.
- Hotchkiss v. Greenwood**, 4 McLean, 456; S. C., 2 Robb, 730. *Affirmed*, 11 How. 248. *Cited*, Curtis on Patents, 72.
- Hotchkiss v. Greenwood**, 11 How. 248. *Cited*, 15 How. 345; 18 Wall. 674; McAll. 52; 9 Blatchf. 535; 5 Fish. Pat. Cas. 428; Curtis on Patents, 51, 70, 71, 72, 73.
- Hovey v. Stevens**, 1 Woodb. & M. 290; S. C., 2 Robb, 479. *See*, in the same case, a further decision in 3 Woodb. & M. 21. *Cited*, 3 Woodb. & M. 20, 141; 8 Opin. Atty. Gen. 276; Curtis on Patents, 51, 411, 416, 424, 425, 426.
- Hovey v. Stevens**, 3 Woodb. & M. 17; S. C., 2 Robb, 567. *Cited*, 8 Wall. 391.
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- Howe v. Morton**, 1 Fish. Pat. Cas. 586. *Cited*, 1 Lowell, 88; 3 Fish. Pat. Cas. 71, 79; 5 id. 394; Curtis on Patents, 269, 308, 413.
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- 19 How. Pr. R. 14; 11 Abb. 28. *Cited*, 40 How. Pr. R. 86; 9 Abb. Pr. R. N. S. 72.
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- Howe v. Underwood**, 1 Fish. Pat. Cas. 160. *Cited*, 8 Blatchf. 423; 5 Fish. Pat. Cas. 406.
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- Hussey v. McCormick**, 1 Biss. 300; S. C., 1 Fish. Pat. Cas. 509. *Cited*, 3 Fish. Pat. Cas. 542.
- Imlay v. Norwich and Worcester R. R. Co.**, 4 Blatchf. 227; S. C., 1 Fish. Pat. Cas. 340. *Cited*, 6 Blatchf. 136; 6 Fish. Pat. Cas. 253.
- India Rubber Comb Co. v. Phelps**, 8 Blatchf. 85; S. C., 4 Fish. Pat. Cas. 315. *Cited*, 9 Blatchf. 551; 5 Fish. Pat. Cas. 538.
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- Jenkins v. Eldredge**, 3 Story, 299. *Cited*, 1 Woodb. & M. 25; 3 id. 426; 14 Wall. 22; 6 Fish. Pat. Cas. 437.
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- Odiorne v. Amesbury N. Factory**, 2 Mass. 28; S. C., 1 Robb, 300; *Cited*, Phillips on Patents, 211, 212; Curtis on Patents, 113 note.
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- Orr v. Badger**, 7 Law Rep. 465. *See* 2 Fish. Pat. Cas. 144. *Cited*, Curtis on Patents, 415, note, 425, 426, 430.
- Orr v. Littlefield**, 1 Woodb. & M. 13; S. C., 2 Robb, 323. *Cited*, 1 Woodb. & M. 304, 379; 8 id. 144-147, 154; 1 Curtis, 286; 2 id. 557; 4 Blatchf. 250; 1 Bond, 417; 1 Fish. Pat. Cas. 396; 2 id. 129, 663; 5 id. 22; Curtis on Patents, 406, 411, 413, 415, 425 note, 430, 443.
- Orr v. Merrill**, 1 Woodb. & M. 376; S. C., 2 Robb, 331. *Cited*, 3 Woodb. & M. 151; Curtis on Patents, 428, 430.
- Packet Company v. Sickles**, 5 Wall. 580. *Cited*, 7 Wall. 103, 106; 19 id. 611.
- Page v. Ferry**, 1 Fish. Pat. Cas. 298. *Cited*, 5 Fish. Pat. Cas. 393; 6 id. 253.
- Paige v. Banks**, 7 Blatchf. 152. *Affirmed*, 13 Wall. 608.
- Palmer v. Harris**, 60 Penn. 156; S. C., Cox Trade Mark Cas. 523. *Cited*, 2 Brewster, 336; Browne on Trade Marks, 374, 481.
- Park v. Little**, 3 Wash. 196; S. C., 1 Robb. 17. *Cited*, 11 Wall. 548; Phillips on Patents, 108, 299, 384; Curtis on Patents, 21, 56, 347.
- Parker v. Bamker**, 6 McLean, 631. *Cited*, 1 Fish. Pat. Cas. 252.
- Parker v. Bigler**, 1 Fish. Pat. Cas. 285. *Cited*, 4 Fish. Pat. Cas. 637.
- Parker v. Corbin**, 4 McLean, 462; S. C., 2 Robb, 736.
- Parker v. Ferguson**, 1 Blatchf. 407. *Cited*, Curtis on Patents, 87, 491.
- Parker v. Hawk**, 2 Fish. Pat. Cas. 58. *Cited*, 7 Blatchf. 230.
- Parker v. Haworth**, 4 McLean, 370; S. C., 2 Robb, 725. *Cited*, 15 How. 341; Curtis on Patents, 353.
- Parker v. Sears**, 1 Fish. Pat. Cas. 93. *Cited*, 3 Fish. Pat. Cas. 71; 4 id. 194.
- Parker v. Stiles**, 5 McLean, 44. *Cited*, 8 Fish. Pat. Cas. 542.
- Parkhurst v. Kinsman**, 1 Blatchf. 488. *Affirmed*, 18 How. 289. *Cited*, 11 Wall. 552; 2 Cliff. 116, 230; 2 Blatchf. 142; 4 id. 310; 9 id. 358; 2 Fish. Pat. Cas. 86, 109, 297, 446; 4 id. 548; 5 id. 282, 463; Curtis on Patents, 186, 407.
- Partridge v. Menck**, 1 How. App. Cas. 547; S. C., Cox Trade Mark Cas. 72. *Cited*, 13 How. Pr. R. 397; 4 Robertson, 612, 57 Barb. 532; 4 Abb. Pr. R. 155; 19 id. 570; Upton on Trade Marks, 34, 218; Browne on Trade Marks, 32, 35, 256, 374, 386, 387, 462, 489, 496.
- Partridge v. Menck**, 2 Sandf. Ch. 622. S. C., 2 Barb. Ch. 101. *Affirmed* 1 How.

- App. Cas. 547. *See* 2 Brewster, 311, 312, 321. *Cited*, 23 Barb. 609; 24 id. 165; 13 How. Pr. R. 344; 19 id. 570; 2 Abb. Pr. R. 324, 325, 462; 4 id. 89, 160, 157; 5 Abb. Pr. R. N. S. 217; 3 Keys, 596; 4 Robertson, 612; 2 Sandf. 619; 7 Bosw. 228; 9 id. 199; 2 Brewster, 306; 4 Phila. 140, 141, 142, 143; 35 Cal. 52.
- Partridge v. Menck**, 2 Barb. Ch. 101; S. C. affirmed, 1 How. App. Cas. 547; S. C. below, 2 Sandf. Ch. 622. *Cited*, 2 Abb. Pr. R. 325; 4 id. 89; 4 How. Pr. R. 296; 13 id. 344; 18 id. 69; 17 Barb. 609; 23 id. 609; 24 id. 165; 49 id. 596; 57 id. 532; 2 Sandf. 619; 4 E. D. Smith, 391; 4 Robertson, 612; 2 Abb. Pr. R. N. S. 462; 2 Brewster, 336.
- Peek v. Frame**, 9 Blatchf. 194; S. C., 5 Fish. Pat. Cas. 113, 211.
- Pennock v. Dialogue**, 4 Wash. 538; S. C., 1 Robb, 466. *Affirmed*, 2 Pet. 1. *Cited*, 16 Penn. 347; 6 Penn. 147; 6 N. Hamp. 477.
- Pennock v. Dialogue**, 2 Pet. 1; S. C., 1 Robb, 542. *See* 1 Story, 597. *Cited*, 6 Pet. 248; 7 id. 318; 1 How. 207; 6 id. 483; 21 id. 329; 1 Black, 219; 1 Wall. 103; 7 id. 608; 11 id. 199; 2 Blatchf. 7; 2 Cliff. 577; 1 Fish. Pat. Cas. 529; Phillips on Patents, 185, 188, 197, 205, 407, 408, 418, 419, 420, 422, 431; Curtis on Patents, 83, 101, 381, 382, 385, 387, 391, 448, 469, 473.
- Pennsylvania Salt Manufacturing Co. v. Gugenheim**, 3 Fish. Pat. Cas. 423. *Cited*, 5 Fish. Pat. Cas. 150, 152.
- Perry v. Parker**, 1 Woodb. & M. 280. *Cited*, McAll, 295, 329; 5 Fish. Pat. Cas. 22, 409; Curtis on Patents, 409.
- Peterson v. Humphrey**, 4 Abb. Pr. R. 594; S. C., Cox Trade Mark Cas. 212. *Cited*, 28 How. Pr. R. 120; 2 Brewster, 312; Upton on Trade Marks, 62; Browne on Trade Marks, 524.
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- Pettibone v. Derringer**, 4 Wash. C. 215; S. C., 1 Robb, 152. *Cited*, Phillips on Patents, 403, 409; Curtis on Patents, 44 note, 475 note.
- Phalon v. Wright**, 5 Philadelphia, 464; S. C., Cox Trade Mark Cas. 307. *Cited*, 13 Wall. 311; Browne on Trade Marks, 166, 484.
- Phelps v. Brown**, 4 Blatchf. 362; S. C., 1 Fish. Pat. Cas. 479; 18 How. Pr. R. 7.
- Phelps v. Comstock**, 4 McLean, 353. *Cited*, 6 Blatchf. 89; 1 Abb. U. S. 569; 3 Fish. Pat. Cas. 414.
- Phelps v. Mayer**, 15 How. 160. *Cited*, 20 How. 254, 438; 2 Black, 568; 2 Cliff. 583.
- Philadelphia Trenton R. & R. Co. v. Stimpson**, 14 Pet. 448; S. C., 2 Robb, 46. *See* 9 Mich. 425. *Cited*, 16 Pet. 87; 2 How. 339; 1 Black, 226; 1 Wall. 706; 8 id. 83, 428; 11 id. 300, 543, 545; 19 id. 395; 2 Woodb. & M. 138; 1 Curtis, 38; 1 Cliff. 632; 2 McLean, 330; 5 Blatchf. 141; 6 id. 200; 9 id. 27; 2 Ben. 65; 2 Fish. Pat. Cas. 371; 3 id. 230, 300; 4 id. 471, 541; 6 id. 319; Curtis on Patents, 282, 285, 351 note, 362, 364, 369, 370 note, 471a, 472, 475 note.
- Phillips v. Comstock**, 4 McLean, 525; S. C., 2 Robb, 46. *See* 1 Abb. U. S. 572. *Cited*, 4 Fish. Pat. Cas. 206; Curtis on Patents, 357.
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- Pierpont v. Fowle**, 2 Woodb. & M. 23. *Cited*, 2 Woodb. & M. 8, 221, 379; 3 id. 97, 301; 2 Curtis, 521; 1 Blatchf. 487; 2 Fish. Pat. Cas. 662; Curtis on Copyright, 234.
- Pierson v. Eagle Screw Co.**, 3 Story, 402; S. C., 2 Robb, 268. *See* 1 Wall., Jr., 164; 13 How. 372. *Cited*, 2 Woodb. & M. 142, 149; Curtis on Patents, 338 note, 391, 393.
- Piper v. Brown**, 4 Fish. Pat. Cas. 175. *Cited*, Curtis on Patents, 153b.
- Piper v. Moon**, 10 Blatchf. 264; S. C. 6 Fish. Pat. Cas. 180.
- Pitts v. Edmonds**, 2 Fish. Pat. Cas. 52. *Cited*, 6 Blatchf. 405; 3 Fish. Pat. Cas. 535.
- Pitts v. Hall**, 2 Blatchf. 229. *Cited*, 7 Wall. 597, 603; 8 id. 426; 9 Blatchf. 62; 5 Fish. Pat. Cas. 35, 196; 6 id. 364; Curtis on Patents, 118, 119, 188, 195, 205, 338, 346, 395 note, 472.
- Pitts v. Hall**, 3 Blatchf. 201. *Cited*, 6 Blatchford, 89; 3 Fisher's Patent Cases, 415.
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- 2 Fish. Pat. Cas. 10; 1 Biss. 87; *Cited*, Curtis on Patents, 87a.
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- Platt v. U. S. Pat. Button, &c.**, **Manuf. Co.**, 9 Blatchf. 342; S. C., 5 Fish. Pat. Cas. 265.
- Poillon v. Schmidt**, 6 Blatchf. 299; S. C., 3 Fish. Pat. Cas. 476.
- Pomeroy v. New York and New Haven R. R. Co.**, 4 Blatchf. 120. *Cited*, 6 Blatchf. 112; 6 Fish. Pat. Cas. 375.
- Poppenhusen v. Falke**, 4 Blatchf. 493; S. C., 2 Fish. Pat. Cas. 181. *Cited*, 6 Fish. Pat. Cas. 373.
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- Potter v. Whitney**, 3 Fish. Pat. Cas. 77; S. C., 1 Lowell, 87.
- Potter v. Wilson**, 2 Fish. Pat. Cas. 102. *Cited*, 2 Fish. Pat. Cas. 262, 386, 471.
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- Rich v. Close**, 8 Blatchf. 41; S. C., 4 Fish. Pat. Cas. 279; *Cited*, Curtis on Patents, 309c.
- Rich v. Lippincott**, 2 Fish. Pat. Cas. 1. *Cited*, 9 Blatchf. 59; 5 Fish. Pat. Cas. 32, 475; Curtis on Patents, 87a.

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- Robertson v. Secomb Manufacturing Co.**, 10 Blatchf. 481; S. C., 6 Fish. Pat. Cas. 268.
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- Rogers v. Abbott**, 4 Wash. 514; S. C., 1 Robb, 465. *Cited*, Phillips on Patents, 270, 454, 455; Curtis on Patents, 408.
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- Rubber Company v. Goodyear**, 6 Wall. 153. *Cited*, 10 Wall. 289; 12 id. 99, 149; 13 id. 56.
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- Rumford Chemical Works v. Laufer**, 10 Blatchf. 122; S. C., 5 Fish. Pat. Cas. 615.
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- 27 Hen. VIII**, chapter 11, 1535, "An act concerning clerks of the signet and privy seal."
- 3 & 4 Edw. VI**, chapter 4, 1549, "An act concerning grants and gifts made by patentees out of letters patent."
- 13 Eliz.**, chapter 6, 1570, "An act that the exemplification or constat of the letters patent shall be as good and available as the letters patent themselves."
- 31 Eliz.**, chapter 5, § 5, 1589, limiting the time within which penal actions may be commenced.
- 21 Jac. I**, chapter 3, 1623, "An act concerning monopolies and dispensations of penal laws, and the forfeiture thereof."
- 3 & 4 Will. IV**, chapter 41, "An act for the better administration of justice in his majesty's privy council." Royal assent, 14th August, 1833.
- 5 & 6 Will. IV**, chapter 62, "An act to repeal an act of the present session of Par-

liament, intituled 'An act for the more effectual abolition of oaths and affirmations taken and made in various departments of the state, and to substitute declarations in lieu thereof, and for the more entire suppression of voluntary and extra-judicial oaths and affidavits,' and to make other provisions for the abolition of unnecessary oaths." Royal assent, 9th September, 1835.

5 & 6 Will. IV, chapter 83, "An act to amend the law touching letters patent for inventions." Royal assent, 10th September, 1835.

1 & 2 Vict., chapter 94, §§ 12 and 13, "An act for keeping safely the public records." Royal assent, 14th August, 1838.

2 & 3 Vict., chapter 67, "An act to amend an act of the fifth and sixth years of the reign of King William the Fourth, intituled 'An act to amend the law touching letters patent for inventions.'" Royal assent, 24th August, 1839.

3 & 4 Vict., chapter 24, §§ 1 and 2, "An act to repeal part of an act of the forty-third year of the reign of Queen Elizabeth, intituled 'An act to avoid trifling and frivolous suits in law in her majesty's courts in Westminster,' and of an act of the twenty-second and twenty-third year of the reign of Charles the Second, intituled 'An act for laying impositions on proceedings at law,' and to make further provisions in lieu thereof." Royal assent, 3d July, 1840.

5 & 6 Vict., chapter 97, § 2, "An act to amend the law relating to double costs, notices of action, limitations of actions and pleas of the general issue, under certain acts of Parliament." Royal assent, 10th August, 1842.

7 & 8 Vict., chapter 69, "An act for amending an act passed in the fourth year of the reign of his late majesty, intituled 'An act for the better administration of justice in his majesty's privy council,' and to extend its jurisdiction and powers." Royal assent, 6th August, 1844.

12 & 13 Vict., chapter 109, "An act to amend an act to regulate certain offices in the Petty Bag in the High Court of Chancery, the practice of the common law side of that court, and the Enrollment Office of the said court." Royal assent, 1st August, 1849.

14 Vict., chapter 8, "An act to extend the provisions of the designs act, 1850, and to give protection from piracy to persons exhibiting new inventions in the exhibition of the works of industry of all nations in one thousand eight hundred and fifty-one." Royal assent, 11th April, 1851.

14 & 15 Vict., chapter 82, "An act to simplify the forms of appointment to certain offices, and the manner of passing grants under the great seal." Royal assent, 7th August, 1851.

15 Vict., chapter 6, "An act for extending the term of the provisional registration of inventions under 'The protection of inventions act, 1851.'" Royal assent, 20th April, 1852.

15 & 16 Vict., chapter 83, "An act for amending the law for granting patents for inventions." Royal assent, 1st July, 1852.

16 Vict., chapter 5, "An act to substitute stamp duties for fees on passing letters patent for inventions, and to provide for the purchase for the public use of certain indexes of specifications." 21st February, 1853.

16 & 17 Vict., chapter 115, "An act to amend certain provisions of the patent law amendment act, 1852, in respect to the transmission of certified copies of letters patent and specifications to certain offices in Edinburgh and Dublin, and otherwise to amend the said act." 20th August, 1853.

22 Vict., chapter 13, "An act to amend the law concerning patents for inventions with respect to inventions for improvements in instruments and munitions of war."

33 & 34 Vict., chapter 27, "An act for the protection of inventions exhibited at international exhibitions in the United Kingdom." 14th July, 1870.



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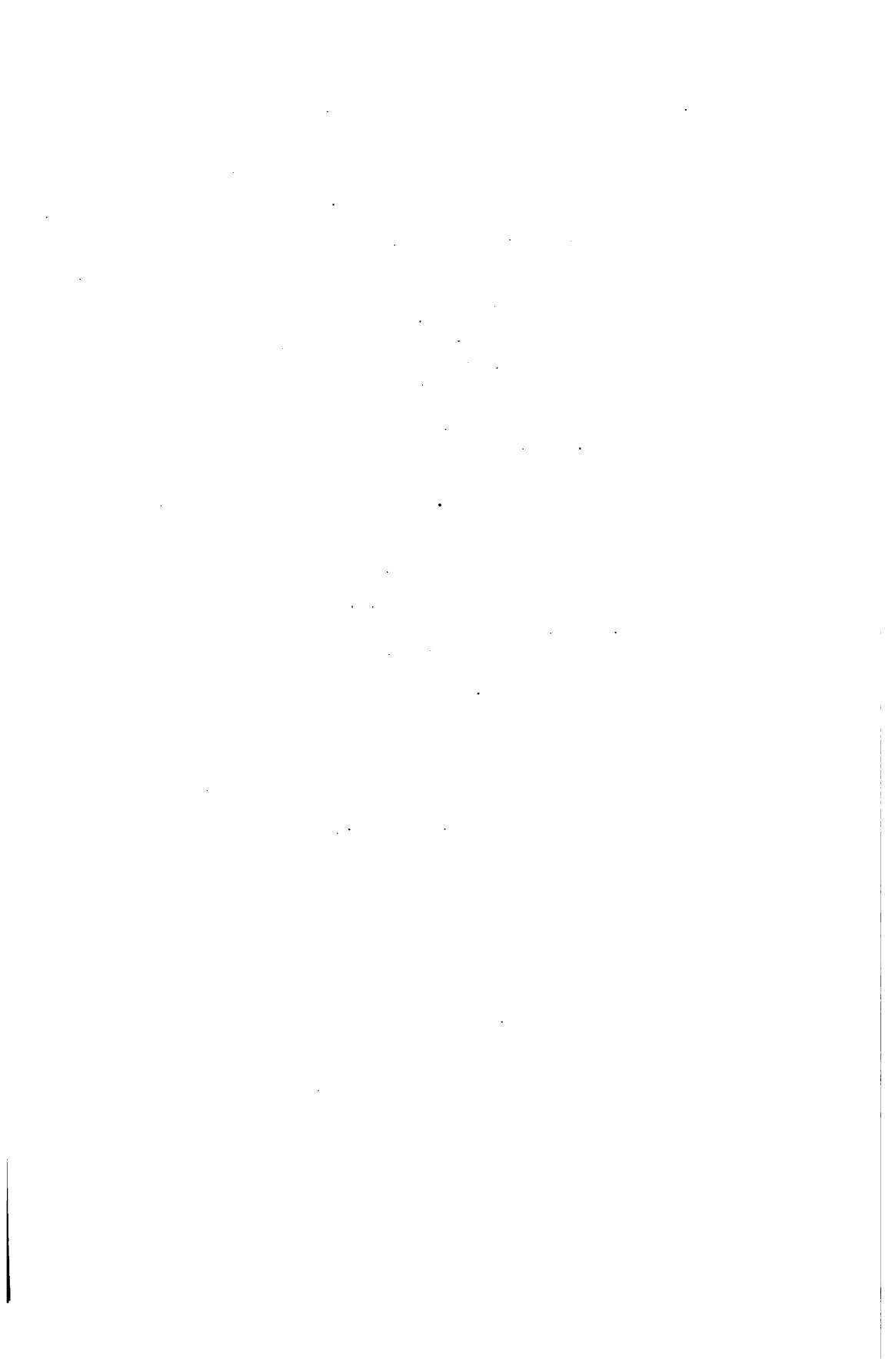
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REVISED STATUTES OF THE UNITED STATES

HAVING REFERENCE TO

PATENTS FOR INVENTION,

APPROVED JUNE 22, 1874.

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Organization.—SEC. 440. There shall be in the Department of the Interior—

In the Patent Office:

One chief clerk, at a salary of two thousand five hundred dollars a year.

One examiner in charge of interferences, at a salary of two thousand five hundred dollars a year.

One examiner in charge of trade-marks, at a salary of two thousand five hundred dollars a year.

Twenty-four principal examiners, at a salary of two thousand five hundred dollars a year each.

Twenty-four first assistant examiners, at a salary of one thousand eight hundred dollars a year each.

Twenty-four second assistant examiners, (two of whom may be women,) at a salary of one thousand six hundred dollars a year each.

Twenty-four third assistant examiners, at a salary of one thousand four hundred dollars a year each.

One librarian, at a salary of two thousand dollars a year.

One machinist, at a salary of one thousand six hundred dollars a year.

Three skilled draughtsmen, at a salary of one thousand two hundred dollars a year each.

Thirty-five copyists of drawings, at a salary of one thousand dollars a year each.

One messenger and purchasing clerk, at a salary of one thousand dollars a year.

One skilled laborer, at a salary of one thousand two hundred dollars a year.

Eight attendants in the model room, at a salary of one thousand dollars a year each.

Eight attendants in the model room, at a salary of nine hundred dollars a year each.

Establishment of the Patent Office.—Sec. 475. There shall be in the Department of the Interior an office known as the Patent Office, where all records, books, models, drawings, specifications, and other papers and things pertaining to patents shall be safely kept and preserved. (8 July, 1870, c. 230, s. 1, v. 16, p. 198.)

Officers and Employees.—Sec. 476. There shall be in the Patent Office a Commissioner of Patents, one Assistant Commissioner, and three examiners-in-chief, who shall be appointed by the President, by and with the advice and consent of the Senate. All other officers, clerks, and employees authorized by law for the Office shall be appointed by the Secretary of the Interior, upon the nomination of the Commissioner of Patents. [See § 169.] (Ibid., s. 2, p. 199.)

Salaries.—Sec. 477. The salaries of the officers mentioned in the preceding section shall be as follows:

The Commissioner of Patents, four thousand five hundred dollars a year.

The Assistant Commissioner of Patents, three thousand dollars a year.

Three examiners-in-chief, three thousand dollars a year each. (Ibid., s. 4, p. 199.)

Seal.—Sec. 478. The seal heretofore provided for the Patent Office shall be the seal of the Office, with which letters patent and papers issued from the Office shall be authenticated. (Ibid., s. 12, p. 200.)

Bonds of Commissioner and Chief Clerk.—Sec. 479. The Commissioner of Patents and the chief clerk, before entering upon their duties, shall severally give bond, with sureties, to the Treasurer of the United States, the former in the sum of ten thousand dollars, and the latter in the sum of five thousand dollars, conditioned for the faithful discharge of their respective duties, and that they shall render to the proper officers of the Treasury a true account of all money received by virtue of their offices. (*Ibid.*, s. 6, p. 199.)

Restrictions upon Officers.—Sec. 480. All officers and employees of the Patent Office shall be incapable, during the period for which they hold their appointments, to acquire or take, directly or indirectly, except by inheritance or bequest, any right or interest in any patent issued by the Office. (*Ibid.*, s. 16, p. 200.)

Duties of Commissioner.—Sec. 481. The Commissioner of Patents, under the direction of the Secretary of the Interior, shall superintend or perform all duties respecting the granting and issuing of patents directed by law; and he shall have charge of all books, records, papers, models, machines, and other things belonging to the Patent Office. (*Ibid.*, s. 7, p. 199.)

Duties of Examiners-in-chief.—Sec. 482. The examiners-in-chief shall be persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the appellant, to revise and determine upon the validity of the adverse decisions of examiners upon applications for patents, and for reissues of patents, and in interference cases; and, when required by the Commissioner, they shall bear and report upon claims for extensions, and perform such other like duties as he may assign them. (8 July, 1870, c. 230, s. 10, v. 16, p. 199.)

Establishment of Regulations.—Sec. 483. The Commissioner of Patents, subject to the approval of the Secretary of the Interior, may from time to time establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office. (*Ibid.*, s. 19, p. 200.)

Arrangement of Models, &c.—Sec. 484. The Commissioner of Patents shall cause to be classified and arranged in suitable cases, in the rooms and galleries provided for that purpose, models, specimens of composition, fabrics, manufactures, works of art, and designs, which have been or shall be deposited in the Patent Office; and the rooms and galleries shall be kept open during suitable hours for public inspection. (*Ibid.*, s. 13, p. 200.)

Disposal of Models.—Sec. 485. The Commissioner of Patents may restore to the respective applicants such of the models belonging to rejected applications as he shall not think necessary to be preserved, or he may sell or otherwise dispose of them after the application has been finally rejected for one year, paying the proceeds into the Treasury, as other patent moneys are directed to be paid. (*Ibid.*, s. 14, p. 200.)

Library.—Sec. 486. There shall be purchased for the use of the Patent Office a library of such scientific works and periodicals, both foreign and American, as may aid the officers in the discharge of their duties, not exceeding the amount annually appropriated for that purpose. (*Ibid.*, s. 15, p. 200.)

Patent Agents.—Sec. 487. For gross misconduct the Commissioner of Patents may refuse to recognize any person as a patent agent, either generally or in any particular case; but the reasons for such refusal shall be duly recorded, and be subject to the approval of the Secretary of the Interior. (*Ibid.*, s. 17, p. 200.)

Printing of Papers Filed.—Sec. 488. The Commissioner of Patents may require all papers filed in the Patent Office, if not correctly, legibly, and clearly written, to be printed at the cost of the party filing them. (*Ibid.*, s. 18, p. 200.)

Printing Copies of Claims, &c.—Sec. 489. The Commissioner of Patents may print, or cause to be printed, copies of the claims of current issues, and copies of such laws, decisions, regulations, and circulars as may be necessary for the information of the public. (*Ibid.*, s. 20, p. 200.)

Printing Specifications.—Sec. 490. The Commissioner of Patents is authorized

to have printed, from time to time, for gratuitous distribution, not to exceed one hundred and fifty copies of the complete specifications and drawings of each patent hereafter issued, together with suitable indexes, one copy to be placed for free public inspection in each capitol of every State and Territory, one for the like purpose in the clerk's office of the district court of each judicial district of the United States, except when such offices are located in State or territorial capitols, and one in the Library of Congress, which copies shall be certified under the hand of the Commissioner and seal of the Patent Office, and shall not be taken from the depositories for any other purpose than to be used as evidence. (11 Jan., 1871, Res. No. 5, v. 16, p. 590.)

Additional Specifications.—SEC. 491. The Commissioner of Patents is authorized to have printed such additional numbers of copies of specifications and drawings, certified as provided in the preceding section, at a price not to exceed the contract price for such drawings, for sale, as may be warranted by the actual demand for the same; and he is also authorized to furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide for proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable. (11 Jan., 1871, Res. No. 5, v. 16, p. 590.)

Lithographing and Engraving.—SEC. 492. The lithographing and engraving required by the two preceding sections shall be awarded to the lowest and best bidders for the interests of the Government, due regard being paid to the execution of the work, after due advertising by the Congressional Printer under the direction of the Joint Committee on Printing; but the Joint Committee on Printing may empower the Congressional Printer to make immediate contracts for engraving, whenever, in their opinion, the exigencies of the public service will not justify waiting for advertisement and award; or if, in the judgment of the Joint Committee on Printing, the work can be performed under the direction of the Commissioner of Patents more advantageously than in the manner above prescribed, it shall be so done, under such limitations and conditions as the Joint Committee on Printing may from time to time prescribe. (*Ibid.* 24 March, 1871, c. 5, s. 1, v. 17, p. 2)

Price of Copies of Specifications.—SEC. 493. The price to be paid for un-certified printed copies of specifications and drawings of patents shall be determined by the Commissioner of Patents, within the limits of ten cents as the minimum and fifty cents as the maximum price. (*Ibid.*, s. 2, p. 3.)

Annual Report.—SEC. 494. The Commissioner of Patents shall lay before Congress, in the month of January, annually, a report, giving a detailed statement of all moneys received for patents, for copies of records or drawings, or from any other source whatever; a detailed statement of all expenditures, for contingent and miscellaneous expenses; a list of all patents which were granted during the preceding year, designating under proper heads the subjects of such patents; an alphabetical list of all the patentees, with their places of residence; a list of all patents which have been extended during the year; and such other information of the condition of the Patent Office as may be useful to Congress or the public. [See §§ 195, 196.] (8 July, 1870, c. 230, s. 9, v. 16, p. 199.)

Collections of Exploring Expeditions.—SEC. 495. The collections of the Exploring Expedition, now in the Patent Office, shall be under the care and management of the Commissioner of Patents. (4 Aug., 1854, c. 242, s. 8, v. 10, p. 572.)

Disbursements for Patent Office.—SEC. 496. All disbursements for the Patent Office shall be made by the disbursing clerk of the Interior Department. (8 July, 1870, c. 230, s. 69, v. 16, p. 209.)

Copies of Records, &c.—SEC. 492. Written or printed copies of any records, books, papers, or drawings belonging to the Patent Office, and of letters patent authenticated by the seal and certified by the Commissioner or Acting Commissioner thereof, shall be evidence in all cases wherein the originals could be evidence; and any person

making application therefor, and paying the fee required by law, shall have certified copies thereof. (*Ibid.*, s. 57, p. 207. *Brooks et al. v. Jenkins et al.*, 3 *McLean*, 432; *Parker v. Haworth*, 4 *McLean*, 370; *Pettibone v. Derringer*, 4 *Wash. C. C.*, 215; *Leev. Blandy*, 2 *Fish.*, 89; (see 1 *Bond*, 361;) *Woodworth v. Hall, Wood. & Min.*, 260; *Emerson v. Hogg*, 2 *Blatch.*, 12.)

Copies of Foreign Letters Patent.—SEC. 893. Copies of the specifications and drawings of foreign letters patent, certified as provided in the preceding section, shall be *prima facie* evidence of the fact of the granting of such letters patent, and of the date and contents thereof. (*Ibid.*, s. 57, p. 207.)

Printed Copies.—SEC. 894. The printed copies of specifications and drawings of patents, which the Commissioner of Patents is authorized to print for gratuitous distribution, and to deposit in the capitols of the States and Territories, and in the clerk's offices of the district courts, shall, when certified by him and authenticated by the seal of his office, be received in all courts as evidence of all matters therein contained. (11 Jan., 1871, Res. 5, v. 16, p. 590.)

Patented Articles.—SEC. 1537. No patented article connected with marine engines shall hereafter be purchased or used in connection with any steam vessels of war until the same shall have been submitted to a competent board of naval engineers, and recommended by such board in writing, for purchase and use. (18 July, 1861, c. 8, s. 3, v. 12, p. 288.)

Royalty by United States to its Officers.—SEC. 1673.—No royalty shall be paid by the United States to any one of its officers or employees for the use of any patent for the system, or any part thereof, mentioned in the preceding section, nor for any such patent in which said officers or employees may be directly or indirectly interested. (6 June, 1872, c. 316, v. 17, p. 261.)

Patents. how Issued.—SEC. 4883. All patents shall be issued in the name of the United States of America, under the seal of the Patent Office, and shall be signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, and they shall be recorded, together with the specifications, in the Patent Office, in books to be kept for that purpose. (8 July, 1870, c. 230, s. 21, v. 16, p. 200. *Doughty v. West*, 6 *Blatch.*, 429.)

Contents and Duration.—SEC. 4884. Every patent shall contain a short title or description of the invention or discovery, correctly indicating its nature and design, and a grant to the patentee, his heirs or assigns, for the term of seventeen years, of the exclusive right to make, use, and vend the invention or discovery throughout the United States, and the Territories thereof, referring to the specification for the particulars thereof. A copy of the specification and drawings shall be annexed to the patent and be a part thereof. (*Ibid.*, s. 22, p. 201. *Simpson v. Wilson*, 4 *How.*, 709; *Pitts v. Whitman*, 2 *Story*, 614; *Sullivan v. Redfield*, 1 *Paine*, 441; *Emerson v. Hogg*, 2 *Blatch.*, 9; *Doughty v. West*, 6 *Blatch.*, 429; *Whitney v. Emmett*, *Baldw.*, 314, *Boyd v. Brown*, 3 *McLean*, 297.)

Date of Patent.—SEC. 4885. Every patent shall bear date as of a day not later than six months from the time at which it was passed and allowed and notice thereof was sent to the applicant or his agent; and if the final fee is not paid within that period, the patent shall be withheld. (*Ibid.*, s. 23, p. 201.)

What Inventions are Patentable.—SEC. 4886. Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known nor used by others in this country, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor. (*Ibid.*, s. 24, p. 201. *Gayler v. Brown*, 10 *How.*, 477; *Hotchkiss v. Greenwood*, 11 *How.*, 248; *Le Roy v. Tatham*, 14 *How.*, 156; *O'Reilly v. Morse*, 15 *How.*, 62; *Corning v. Burden*, 15 *How.*, 252; *Kendall v. Winsor*, 21 *How.*, 322; *Appleton*

v. Bacon and North, 2 Bl., 699; Burr v. Duryee, 1 Wall., 521; Jacobs v. Baker, 7 Wall., 295; Tyler v. Boston, 7 Wall., 327; Agawam Co. v. Jordan, 7 Wall., 583; Whitely v. Swayne, 7 Wall., 685; Rubber Co. v. Goodyear, 9 Wall., 788; Stimpson v. Woodman, 10 Wall., 117; Gorham Co. v. White, 14 Wall., 511; Mowry v. Whitney, 14 Wall., 620; Carlton v. Bokee, 17 Wall., 463; Coffin v. Ogden, 18 Wall., 120; Hicks v. Kelsey, 18 Wall., 670; Woodstock v. Parker, 1 Gallis., 437; Odiorne v. Winkley, 2 Gallis., 51; Ames v. Howard, 1 Sumn., 482; Ryan v. Goodwin, 3 Sumn., 518; How v. Abbott, 2 Story, 194; Bean v. Smallwood, 2 Story, 411; Carver v. Braintree Manf. Co., 2 Story, 438; Hovey v. Stevens, 3 Wood. & M., 17; Foote v. Silsby, 1 Blatch., 445; Parkhurst v. Kinsman, 1 Blatch., 493; Hall v. Wiles, 2 Blatch., 194; McCormick v. Seymour, 2 Blatch., 240; Ellithorpe v. Robinson, 4 Blatch., 307; Morton v. The New York Eye Infirmary, 5 Blatch., 116; Hoffman v. Stiefel, 7 Blatch., 58; Reutgen v. Kanowrs and Graunt, 1 Wash., 171; Park v. Little and Wood, 3 Wash., 198; Kneass v. The Schuylkill Bank, 4 Wash., 12; Whitney v. Emmett, Baldw., 314; Goodyear v. The Railroad, 2 Wall. jr., 360; Smith v. Pearce, 2 McLean, 178; Root v. Ball and Davis, 4 McLean, 177; Hotchkiss v. Greenwood and Wood, 4 McLean, 461; Stainthorp v. Humiston, 1 Fish. Pat. Cas., 475; Poillon v. Schmidt, 3 Fish. Pat. Cas., 476.)

Inventions Patented abroad.—Sec. 4887. No person shall be debarred from receiving a patent for his invention or discovery, nor shall any patent be declared invalid, by reason of its having been first patented or caused to be patented in a foreign country, unless the same has been introduced into public use in the United States for more than two years prior to the application. But every patent granted for an invention which has been previously patented in a foreign country shall be so limited as to expire at the same time with the foreign patent, or, if there be more than one, at the same time with the one having the shortest term, and in no case shall it be in force more than seventeen years. (8 July, 1870, c. 230, s. 25, v. 18, p. 201. O'Reilly v. Morse, 15 How., 62; Hays v. Sulzor, 1 Fish. Pat. Cas., 532; Judson v. Cope, 1 Fish. Pat. Cas., 615.)

Requisites of Application.—Sec. 4888. Before an inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery. The specification and claim shall be signed by the inventor and attested by two witnesses. (Ibid., s. 26, p. 201. Evans v. Eaton, 7 Wh., 434; Wood v. Underhill, 5 How., 1; Hogg v. Emerson, 11 How., 587; O'Reilly v. Morse, 15 How., 62; Corning v. Burden, 15 How., 252; LeRoy v. Tatham, 22 How., 132; Phillips v. Paige, 24 How., 164; Tyler v. Boston, 7 Wall., 327; Carlton v. Bokee, 17 Wall., 463; Langdon v. DeGroot, 1 Paine, 203; Sullivan v. Redfield, 1 Paine, 450; Many v. Jagger, 1 Blatch., 372; Gray and Osgood v. James, Pet. C. C., 401; Park v. Little and Wood, 3 Wash., 198; Brooks and Morris v. Bicknell and Jenkins, 3 McLean, 250.)

Drawings, when requisite.—Sec. 4889. When the nature of the case admits of drawings, the applicant shall furnish one copy signed by the inventor or his attorney in fact, and attested by two witnesses, which shall be filed in the Patent Office; and a copy of the drawing, to be furnished by the Patent Office, shall be attached to the patent as a part of the specification. (Ibid., s. 27, p. 201. O'Reilly v. Morse, 15 How., 62; Washburn v. Gould, 3 Story, 133.)

Specimens of Ingredients, &c.—Sec. 4890. When the invention or discovery is of a composition of matter, the applicant, if required by the Commissioner, shall

furnish specimens of ingredients and of the composition, sufficient in quantity for the purpose of experiment. (8 July, 1870, c. 230, s. 28, v. 16, p. 201.)

Model, when requisite.—Sec. 4891. In all cases which admit of representation by model, the applicant, if required by the Commissioner, shall furnish a model of convenient size to exhibit advantageously the several parts of his invention or discovery. (*Ibid.*, s. 29, p. 201. *Hogg v. Emerson*, 6 How., 437; *McCormick v. Talcott*, 20 How., 409.)

Oath required from Applicant.—Sec. 4892. The applicant shall make oath that he does verily believe himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent; that he does not know and does not believe that the same was ever before known or used; and shall state of what country he is a citizen. Such oath may be made before any person within the United States authorized by law to administer oaths, or when the applicant resides in a foreign country, before any minister, chargé d'affaires, consul, or commercial agent, holding commission under the Government of the United States, or before any notary public of the foreign country in which the applicant may be.

Examination and Issuing Patent.—Sec. 4893.—On the filing of any such application and the payment of the fees required by law, the Commissioner of Patents shall cause an examination to be made of the alleged new invention or discovery; and if on such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, the Commissioner shall issue a patent therefor. (*Ibid.*, s. 31, p. 202.)

Time of Completing Applications.—Sec. 4894. All applications for patents shall be completed and prepared for examination within two years after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within two years after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable. (*Ibid.*, s. 32, p. 202. *Bell v. Daniels*, 1 Bond, 212.)

Patents Granted to Assignee.—Sec. 4895. Patents may be granted and issued or reissued to the assignee of the inventor or discoverer; but the assignment must first be entered of record in the Patent Office. And in all cases of an application by an assignee for the issue of a patent, the application shall be made and the specification sworn to by the inventor or discoverer; and in all cases of an application for a reissue of any patent, the application must be made and the correct specification signed by the inventor or discoverer, if he is living, unless the patent was issued and the assignment made before the eighth day of July, eighteen hundred and seventy. (*Ibid.*, s. 33, p. 202. 3 March, 1871, c. 132, v. 16, p. 583. *Gaylor v. Leonard*, 10 How., 477; *Swift v. Whisen*, 3 Fish. Pat. Cas., 343.)

Executor or Administrator may obtain Patent.—Sec. 4896. When any person, having made any new invention or discovery for which a patent might have been granted, dies before a patent is granted, the right of applying for and obtaining the patent shall devolve on his executor or administrator, in trust for the heirs at law of the deceased, in case he shall have died intestate; or if he shall have left a will, disposing of the same, then in trust for his devisees, in as full manner and on the same terms and conditions as the same might have been claimed or enjoyed by him in his life-time; and when the application is made by such legal representatives, the oath or affirmation required to be made shall be so varied in form that it can be made by them. (8 July, 1870, c. 230, s. 34, v. 16, p. 202. *Rubber Co. v. Goodyear*, 9 Wall., 788.)

Renewal in Cases of Failure to Pay Fees.—Sec. 4897. Any person who has an interest in an invention or discovery, whether as inventor, discoverer, or assignee, for which a patent was ordered to issue upon the payment of the final fee, but who fails to make payment thereof within six months from the time at which it

was passed and allowed, and notice thereof was sent to the applicant or his agent, shall have a right to make an application for a patent for such invention or discovery the same as in the case of an original application. But such second application must be made within two years after the allowance of the original application. But no person shall be held responsible in damages for the manufacture or use of any article or thing for which a patent was ordered to issue under such renewed application prior to the issue of the patent. And upon the hearing of renewed applications preferred under this section, abandonment shall be considered as a question of fact. (*Ibid.*, s. 35, p. 202.)

Assignments of Patents.—**Sec. 4898.** Every patent or any interest therein shall be assignable in law by an instrument in writing; and the patentee or his assigns or legal representatives may, in like manner, grant and convey an exclusive right under his patent to the whole or any specified part of the United States. An assignment, grant, or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, without notice, unless it is recorded in the Patent Office within three months from the date thereof. (*Ibid.*, s. 36, p. 203. *Woodworth v. Wilson*, 4 How., 712; *Wilson v. Simpson*, 9 How., 109; *Gaylor v. Wilder*, 10 How., 494; *Bloomer v. McQuewan*, 14 How., 539; *Kinsman v. Parkhurst*, 18 How., 289; *Hartshorn v. Day*, 19 How., 211; *Railroad Co. v. Trimble*, 10 Wall., 367; *Nicolson Pavement Co. v. Jenkins*, 14 Wall., 452; *Adams v. Burke*, 17 Wall., 453; *Eunson v. Dodge*, 18 Wall., 414; *Goodyear v. Cary*, 4 Blatch., 271; *Perry v. Corning* 7 Blatch., 195; *Bell v. McCullough*, 1 Bond, 194; *Hussey v. Whitely*, 1 Bond, 407; *Pitts v. Jameson*, 15 Barb., (N. Y.), 310.)

Persons Purchasing of Inventor, before Application, &c.—**Sec. 4899.** Every person who purchases of the inventor, or discoverer, or with his knowledge and consent constructs any newly invented or discovered machine, or other patentable article, prior to the application by the inventor or discoverer for a patent, or who sells or uses one so constructed, shall have the right to use, and vend to others to be used, the specific thing so made or purchased, without liability therefor. (8 July, 1870, c. 230, s. 37, v. 16, p. 203. *Kendall v. Winsor*, 21 How., 322; *Sargent v. Seagrave*, 2 Curt. C. C., 555; *Root v. Ball and Davis*, 4 McLean, 177.)

Patented Articles must be Marked.—**Sec. 4900.** It shall be the duty of all patentees, and their assigns and legal representatives, and of all persons making or vending any patented article for or under them, to give sufficient notice to the public that the same is patented; either by fixing thereon the word "patented," together with the day and year the patent was granted; or when, from the character of the article, this cannot be done, by fixing to it, or to the package wherein one or more of them is inclosed, a label containing the like notice; and in any suit for infringement, by the party failing so to mark, no damages shall be recovered by the plaintiff, except on proof that the defendant was duly notified of the infringement, and continued, after such notice, to make, use, or vend the article so patented. (*Ibid.*, s. 38, p. 203. *Rubber Co. v. Goodyear*, 9 Wall., 788; *Goodyear v. Allyn*, 6 Blatch., 33.)

Penalty for Falsely Marking.—**Sec. 4901.** Every person who, in any manner, marks upon anything made, used, or sold by him, for which he has not obtained a patent, the name or any imitation of the name of any person who has obtained a patent therefor, without the consent of such patentee, or his assigns or legal representatives; or

Who, in any manner, marks upon or affixes to any such patented article the word "patent," or "patentee," or the words "letters patent," or any word of like import, with intent to imitate or counterfeit the mark or device of the patentee, without having the license or consent of such patentee or his assigns or legal representatives; or

Who, in any manner, marks upon or affixes to any unpatented article the word "patent," or any word importing that the same is patented, for the purpose of deceiving the public, shall be liable, for every such offense, to a penalty of not less than one hundred dollars, with costs; one-half of said penalty to the person who shall sue for

the same, and the other to the use of the United States, to be recovered by suit in any district court of the United States within whose jurisdiction such offense may have been committed. (*Ibid.*, s. 39, p. 203.)

Filing of Caveats.—SEC. 4902. Any citizen of the United States who makes any new invention or discovery, and desires further time to mature the same, may, on payment of the fees required by law, file in the Patent Office a caveat setting forth the design thereof, and of its distinguishing characteristics, and praying protection of his right until he shall have matured his invention. Such caveat shall be filed in the confidential archives of the office and preserved in secrecy, and shall be operative for the term of one year from the filing thereof; and if application is made within the year by any other person for a patent with which such caveat would in any manner interfere, the Commissioner shall deposit the description, specification, drawings, and model of such application in like manner in the confidential archives of the office, and give notice thereof, by mail, to the person by whom the caveat was filed. If such person desires to avail himself of his caveat, he shall file his description, specifications, drawings, and model within three months from the time of placing the notice in the post office in Washington, with the usual time required for transmitting it to the caveat or added thereto; which time shall be indorsed on the notice. An alien shall have the privilege herein granted, if he has resided in the United States one year next preceding the filing of his caveat, and has made oath of his intention to become a citizen. (8 July, 1870, c. 230, s. 40, v. 16, p. 203. *Bell v. Daniels*, 1 Bond, 212.)

Notice of Rejection to be Given.—SEC. 4903. Whenever, on examination, any claim for a patent is rejected, the Commissioner shall notify the applicant thereof, giving him briefly the reasons for such rejection, together with such information and references as may be useful in judging of the propriety of renewing his application or of altering his specification; and if, after receiving such notice, the applicant persists in his claim for a patent, with or without altering his specifications, the Commissioner shall order a re-examination of the case. (*Ibid.*, s. 41, p. 204.)

Interferences.—SEC. 4904. Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any unexpired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention. And the Commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner, or of the board of examiners-in-chief, as the case may be, within such time, not less than twenty days, as the Commissioner shall prescribe. (*Ibid.*, s. 42, p. 204.)

Affidavits and Depositions.—SEC. 4905. The Commissioner of Patents may establish rules for taking affidavits and depositions required in cases pending in the Patent Office, and such affidavits and depositions may be taken before any officer authorized by law to take depositions to be used in the courts of the United States, or of the State where the officer resides. (8 July, 1870, c. 230, s. 43, v. 16, p. 204.)

Subpoenas to Witnesses.—SEC. 4906. The clerk of any court of the United States, for any district or territory wherein testimony is to be taken for use in any contested case pending in the Patent Office, shall, upon the application of any party thereto, or of his agent or attorney, issue a subpoena for any witness residing or being within such district or territory, commanding him to appear and testify before any officer in such district or territory authorized to take depositions and affidavits, at any time and place in the subpoena stated. But no witness shall be required to attend at any place more than forty miles from the place where the subpoena is served upon him. (*Ibid.*, secs. 44, 45, p. 204.)

Witness Fees.—SEC. 4907. Every witness duly subpoenaed and in attendance shall be allowed the same fees as are allowed to witnesses attending the courts of the United States. (*Ibid.*, s. 45.)

Penalty for Refusing to Testify.—SEC. 4908. Whenever any witness, after

being duly served with such subpoena, neglects or refuses to appear, or after appearing refuses to testify, the judge of the court whose clerk issued the subpoena may, on proof of such neglect or refusal, enforce obedience to the process, or punish the disobedience, as in other like cases. But no witness shall be guilty of contempt for disobeying such subpoena, unless his fees and traveling expenses in going to, returning from, and one day's attendance at the place of examination, are paid or tendered him at the time of the service of the subpoena; nor for refusing to disclose any secret invention or discovery made or owned by himself. (*Ibid.*, secs. 44, 45.)

Appeals to Examiners-in-chief.—**Sec. 4909.** Every applicant for a patent or for the reissue for a patent, any of the claims of which have been twice rejected, and every party to an interference, may appeal from the decision of the primary examiner, or of the examiner in charge of interferences in such case, to the board of examiners in-chief; having once paid the fee for such appeal. (*Ibid.*, s. 46.)

Appeals to Commissioner.—**Sec. 4910.** If such party is dissatisfied with the decision of the examiners-in-chief, he may, on payment of the fee prescribed, appeal to the Commissioner in person. (*Ibid.*, s. 47, p. 205)

Appeals to the Supreme Court, District of Columbia.—**Sec. 4911.** If such party, except a party to an interference, is dissatisfied with the decision of the Commissioner, he may appeal to the Supreme Court of the District of Columbia, sitting in banc. (*Ibid.*, s. 48.)

Notice of such Appeal.—**Sec. 4912.** When an appeal is taken to the Supreme Court of the District of Columbia, the applicant shall give notice thereof to the Commissioner, and file in the Patent Office, within such time as the Commissioner shall appoint, his reasons of appeal, specifically set forth in writing. (8 July, 1870, c. 230, s. 49, v. 16, p. 206.)

Proceedings on Appeal to Court.—**Sec. 4913.** The court shall, before hearing such appeal, give notice to the Commissioner of the time and place of the hearing, and on receiving such notice the Commissioner shall give notice of such time and place in such manner as the court may prescribe, to all parties who appear to be interested therein. The party appealing shall lay before the court certified copies of all the original papers and evidence in the case, and the Commissioner shall furnish the court with the grounds of his decision, fully set forth in writing, touching all the points involved by the reasons of appeal. And at the request of any party interested, or of the court, the Commissioner and the examiners may be examined under oath, in explanation of the principles of the thing for which a patent is demanded. (*Ibid.*, s. 51.)

Determination of such Appeal.—**Sec. 4914.** The court, on petition, shall hear and determine such appeal, and revise the decision appealed from in a summary way, on the evidence produced before the Commissioner, at such early and convenient time as the court may appoint; and the revision shall be confined to the points set forth in the reasons of appeal. After hearing the case the court shall return to the Commissioner a certificate of its proceedings and decision, which shall be entered of record in the Patent Office, and shall govern the further proceedings in the case. But no opinion or decision of the court in any such case shall preclude any person interested from the right to contest the validity of such patent in any court wherein the same may be called in question. (*Ibid.*, s. 50.)

Patents Obtainable by Bill in Equity.—**Sec. 4915.** Whenever a patent on application is refused, either by the Commissioner of Patents or by the Supreme Court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge that such applicant is entitled, according to law, to receive a patent for his invention, as specified in his claim, or for any part thereof, as the facts in the case may appear. And such adjudication, if it be in favor of the right of the applicant, shall authorize the Commissioner to issue such patent on the applicant filing in the Patent Office a copy of the adjudication, and otherwise complying with the requirements of law. In all cases where

there is no opposing party, a copy of the bill shall be served on the Commissioner; and all the expenses of the proceeding shall be paid by the applicant, whether the final decision is in his favor or not. [See § 629, p. 9.] (*Ibid.*, s. 52.)

Reissue of Defective Patents.—SEC. 4910. Whenever any patent is inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, the Commissioner shall, on the surrender of such patent and the payment of the duty required by law, cause a new patent for the same invention, and in accordance with the corrected specification, to be issued to the patentee, or, in the case of his death or of an assignment of the whole or any undivided part of the original patent, then to his executors, administrators, or assigns, for the unexpired part of the term of the original patent. Such surrender shall take effect upon the issue of the amended patent. The Commissioner may, in his discretion, cause several patents to be issued for distinct and separate parts of the thing patented, upon demand of the applicant, and upon payment of the required fee for a reissue of each of such reissued letters patent. The specifications and claim in every such case shall be subject to revision and restriction in the same manner as original applications are. Every patent so reissued, together with the corrected specification, shall have the same effect and operation in law, on the trial of all actions for causes thereafter arising, as if the same had been originally filed in such corrected form; but no new matter shall be introduced into the specification, nor in case of a machine patent shall the model or drawings be amended, except each by the other; but when there is neither model nor drawing, amendments may be made upon proof satisfactory to the Commissioner that such new matter or amendment was a part of the original invention, and was omitted from the specification by inadvertence, accident, or mistake, as aforesaid. (8 July, 1870, c. 230, s. 53, v. 16, p. 205. *Shaw v. Cooper*, 7 Pet., 292; *Wilson v. Rousseau*, 4 How., 846; *Moffitt v. Garr*, 1 Bl., 273; *Reed v. Bowman*, 2 Wall., 591; *Commissioner v. Whiteley*, 4 Wall., 522; *Bennet v. Fowler*, 7 Wall., 445; *Morey v. Lockwood*, 8 Wall., 230; *Seymour v. Osborne*, 11 Wall., 516; *Carlton v. Bokee*, 17 Wall., 463; *Ames v. Howard*, 1 Sumn., 488; *Carver v. Braintree Manufacturing Co.*, 2 Story, 439; *Allen v. Blunt*, 3 Story, 743; *Woodward v. Stone*, 3 Story, 753; *Woodworth v. Hall*, 1 Wood. & M., 261, 262; *Allen v. Blunt*, 2 Wood. & M., 138; *Woodworth v. Edwards*, 3 Wood. & M., 126; *Forbes v. Stove Co.*, 2 Cliff., 379; *Cahart v. Austin*, 2 Cliff., 528; *Gib v. Harris*, 1 Blatch., 169; *Potter v. Holland*, 4 Blatch., 206; *Batten v. Taggart*, 2 Wall., Jr., 102; *Stanley v. Whipple*, 2 McLean, 37; *Moffitt v. Garr*, 1 Bond, 315.)

Disclaimer.—SEC. 4917. Whenever, through inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, a patentee has claimed more than that of which he was the original or first inventor or discoverer, his patent shall be valid for all that part which is truly and justly his own, provided the same is a material or substantial part of the thing patented; and any such patentee, his heirs or assigns, whether of the whole or any sectional interest therein, may, on payment of the fee required by law, make disclaimer of such parts of the thing patented as he shall not choose to claim or to hold by virtue of the patent or assignment, stating therein the extent of his interest in such patent. Such disclaimer shall be in writing, attested by one or more witnesses, and recorded in the Patent Office; and it shall thereafter be considered as part of the original specification to the extent of the interest possessed by the claimant and by those claiming under him after the record thereof. But no such disclaimer shall affect any action pending at the time of its being filed, except so far as may relate to the question of unreasonable neglect or delay in filing it. (*Ibid.*, s. 54, p. 206. *Silsby v. Foote*, 14 How., 218; *O'Reilly v. Morse*, 15 How., 121; *Seymour v. McCormick*, 19 How., 206; *Wyeth v. Stone*, 1 Story, 294; *Reed v. Cutter*, 1 Story, 600; *Guyon v. Serrell*, 1 Blatch., 244; *Hall v. Wilds*, 2 Blatch., 198; *Tuck v. Bramhill*, 6 Blatch., 95; *Whitney v. Emmett*, 1 Baldw., 313; *Brooks v. Jenkins*, 4 McLean, 449.)

Interfering Patents:—SEC. 4918. Whenever there are interfering patents, any person interested in any one of them, or in the working of the invention claimed under either of them, may have relief against the interfering patentee, and all parties interested under him, by suit in equity against the owners of the interfering patent; and the court, on notice to adverse parties, and other due proceedings had according to the course of equity, may adjudge and declare either of the patents void in whole or in part, or inoperative, or invalid in any particular part of the United States, according to the interest of the parties in the patent or the invention patented. But no such judgment or adjudication shall affect the right of any person except the parties to the suit and those deriving title under them subsequent to the rendition of such judgment. (8 July, 1870, c. 230, s. 58, v. 16, p. 207.)

Damages.—SEC. 4919. Damages for the infringement of any patent may be recovered by action on the case, in the name of the party interested, either as patentee, assignee, or grantee. And whenever in any such action a verdict is rendered for the plaintiff, the court may enter judgment thereon for any sum above the amount found by the verdict as the actual damages sustained, according to the circumstances of the case, not exceeding three times the amount of such verdict, together with the costs. (*Ibid.*, s. 59, p. 207. *Dean v. Mason*, 20 How., 198; *Corporation of New York v. Ransom*, 23 How., 487; *Moore v. Marsh*, 7 Wall., 515; *Mowry v. Whitney*, 14 Wall., 620; *Mitchell v. Hawley*, 16 Wall., 544; *Philip v. Nock*, 17 Wall., 460.)

Pleading and Proof.—SEC. 4920. In any action for infringement the defendant may plead the general issue, and having given notice in writing to the plaintiff or his attorney, thirty days before, may prove, on trial, any one or more of the following special matters:

First. That for the purpose of deceiving the public the description and specification filed by the patentee in the Patent Office was made to contain less than the whole truth relative to his invention or discovery, or more than is necessary to produce the desired effect; or,

Second. That he had surreptitiously or unjustly obtained the patent for that which was in fact invented by another, who was using reasonable diligence in adapting and perfecting the same; or,

Third. That it had been patented or described in some printed publication prior to his supposed invention or discovery thereof; or,

Fourth. That he was not the original and first inventor or discoverer of any material and substantial part of the thing patented; or,

Fifth. That it had been in public use or on sale in this country for more than two years before his application for a patent, or had been abandoned to the public.

And in notices as to proof of previous invention, knowledge, or use of the thing patented, the defendant shall state the names of patentees and the dates of their patents, and when granted, and the names and residences of the persons alleged to have invented, or to have had the prior knowledge of the thing patented, and where and by whom it had been used; and if any one or more of the special matters alleged shall be found for the defendant, judgment shall be rendered for him with costs. And the like defenses may be pleaded in any suit in equity for relief against an alleged infringement; and proofs of the same may be given upon like notice in the answer of the defendant, and with the like effect. (*Ibid.*, s. 61, p. 208. *Blanchard v. Putnam*, 8 Wall., 429; *Wise v. Allis*, 9 Wall., 737.)

Power of Courts to Grant Injunctions and Estimate Damages.—SEC. 4921. The several courts vested with jurisdiction of cases arising under the patent laws shall have power to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and upon a decree being rendered in any such case for an infringement, the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby; and the court shall assess the same or cause the same to be assessed

under its direction. And the court shall have the same power to increase such damages, in its discretion, as is given to increase the damages found by verdicts in actions in the nature of actions of trespass upon the case. (8 July, 1870, c. 230, s. 55, v. 16, p. 206. *Woodworth v. Wilson*, 4 How., 712; *Hogg v. Emerson*, 11 How., 587; *Livingston v. Woodworth*, 15 How., 546; *Seymour v. McCormick*, 16 How., 489; *Deau v. Mason*, 20 How., 198; *Corporation of New York v. Ransom*, 23 How., 487; *Moore v. Marsh*, 7 Wall., 515; *Rubber Co. v. Goodyear*, 9 Wall., 788; *Mowry v. Whitney*, 14 Wall., 629; *Mitchell v. Hawley*, 16 Wall., 544; *Philp v. Nock*, 17 Wall., 460; *Nesmith v. Calvert*, 1 Wood. & M., 34; *Woodworth v. Edwards*, 3 Wood. & M., 120; *Woodworth v. Weed*, 1 Blatch., 165; *Allen v. Blunt*, 1 Blatch., 486; *Wilson v. Sherman*, 1 Blatch., 536; *Goodyear v. Day*, 1 Blatch., 565; *Goodyear v. Rubber Co.*, 4 Blatch., 63; *Tatham v. Lowber*, 4 Blatch., 86; *Goodyear v. Allyn*, 6 Blatch., 33; *Ogle v. Ege*, 4 Wash., 584; *Blank v. Manufacturing Co.*, 3 Wall., jr., 196; *Brooks v. Stolley*, 3 McLean, 523; *Hussey v. Whitely*, 1 Bond, 407.)

Where Specification is too broad.—SEC. 4922. Whenever, through inadvertence, accident, or mistake, and without any willful default or intent to defraud or mislead the public, a patentee has, in his specification, claimed to be the original and first inventor or discoverer of any material or substantial part of the thing patented, of which he was not the original and first inventor or discoverer, every such patentee, his executors, administrators, and assigns, whether of the whole or any sectional interest in the patent, may maintain a suit at law or in equity, for the infringement of any part thereof, which was *bona fide* his own, if it is a material and substantial part of the thing patented, and definitely distinguishable from the parts claimed without right, notwithstanding the specifications may embrace more than that of which the patentee was the first inventor or discoverer. But in every such case in which a judgment or decree shall be rendered for the plaintiff no costs shall be recovered unless the proper disclaimer has been entered at the Patent Office before the commencement of the suit. But no patentee shall be entitled to the benefits of this section if he has unreasonably neglected or delayed to enter a disclaimer. (8 July, 1870, c. 230, s. 60, v. 16, p. 207. *O'Reilly v. Morse*, 15 How., 62; *Seymour v. McCormick*, 19 How., 106; *Silsby v. Foote*, 20 How., 378; *Vance v. Campbell*, 1 Bl., 427; *Wyeth v. Stone*, 1 Story, 273; *Reed v. Cutter*, 1 Story, 600; *Pitts v. Whitman*, 2 Story, 621; *Guyon v. Serrell*, 1 Blatch., 244; *Hall v. Wilds*, 2 Blatch., 198, 199; *Brooks v. Jenkins*, 3 McLean, 449.)

Previous use in Foreign Country.—SEC. 4923. Whenever it appears that a patentee, at the time of making his application for the patent, believed himself to be the original and first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery, or any part thereof, having been known or used in a foreign country, before his invention or discovery thereof, if it had not been patented or described in a printed publication. (*Ibid.*, s. 62, p. 208. *Judson v. Cope*, 1 Bond, 327; *Bartholomew v. Sawyer*, 1 Fish. Pat. Cas., 516; *How v. Morton*, 1 Fish. Pat. Cas., 586.

Operation of Extensions.—SEC. 4928. The benefit of the extension of a patent shall extend to the assignees and grantees of the right to use the thing patented, to the extent of their interest therein. (*Ibid.*, s. 67, p. 209. *Wilson v. Rousseau*, 4 How., 646; *Bloomer v. McQuewan*, 14 How., 549; *Chaffee v. The Boston Belting Co.*, 22 How., 223; *Bloomer v. Millinger*, 1 Wall., 340; *Nicolson Pavement Co. v. Jenkins*, 14 Wall., 452; *Eunson v. Dodge*, 18 Wall., 414; *Gibson v. Cook*, 2 Blatch., 146; *Blanchard v. Whitney*, 3 Blatch., 307; *Day v. Rubber Co.*, 3 Blatch., 488; *Phelps v. Comstock*, 4 McLean, 353.)

Patents for Designs authorized.—SEC. 4929. Any person who, by his own industry, genius, efforts, and expense, has invented and produced any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief; any new and original design for the printing of woolen, silk, cotton, or other fabrics; any new and original impression, ornament, patent, [pattern,] print, or picture to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture; or any new, useful,

and original shape or configuration of any article of manufacture, the same not having been known or used by others before his invention or production thereof, or patented or described in any printed publication, may, upon payment of the fee prescribed, and other due proceedings had, the same as in cases of inventions or discoveries, obtain a patent therefor. (*Ibid.*, s. 71, p. 209. *Clark v. Bousfield*, 10 Wall., 133; *Gorham Co. v. White*, 14 Wall., 511; *Booth v. Garrelly*, 1 Blatch., 247; *Root v. Ball*, 4 McLean, 180.)

Models of Designs.—SEC. 4930. The Commissioner may dispense with models of designs when the design can be sufficiently represented by drawings or photographs. (8 July, 1870, c. 230, s. 72, v. 16, p. 210.)

Duration of Patents for Designs.—SEC. 4931. Patents for designs may be granted for the term of three years and six months, or for seven years, or for fourteen years, as the applicant may, in his application, elect. (*Ibid.*, s. 73.)

Extension of Patents for Designs.—SEC. 4932. Patentees of designs issued prior to the second day of March, eighteen hundred and sixty-one, shall be entitled to extension of their respective patents for the term of seven years, in the same manner and under the same restrictions as are provided for the extension of patents for inventions or discoveries, issued prior to the second day of March, eighteen hundred and sixty-one. (*Ibid.*, s. 74.)

Patents for Designs.—SEC. 4933. All the regulations and provisions which apply to obtaining or protecting patents for inventions or discoveries not inconsistent with the provisions of this title, shall apply to patents for designs. (*Ibid.*, s. 76.)

Fees in obtaining Patents, &c.—SEC. 4934. The following shall be the rates for patent fees:

On filing each original application for a patent, except in design cases, fifteen dollars.

On issuing each original patent, except in design cases, twenty dollars.

In design cases: For three years and six months, ten dollars; for seven years, fifteen dollars; for fourteen years, thirty dollars.

On filing each caveat, ten dollars.

On every application for the reissue of a patent, thirty dollars.

On filing each disclaimer, ten dollars.

On every application for the extension of a patent, fifty dollars.

On the granting of every extension of a patent, fifty dollars.

On an appeal for the first time from the primary examiners to the examiners-in-chief, ten dollars.

On every appeal from the examiners-in-chief to the Commissioner, twenty dollars.

For certified copies of patents and other papers, including certified printed copies, ten cents per hundred words.

For recording every assignment, agreement, power of attorney, or other paper, of three hundred words or under, one dollar; of over three hundred and under one thousand words, two dollars; of over one thousand words, three dollars.

For copies of drawings, the reasonable cost of making them. (*Ibid.*, s. 68, p. 209; s. 75, p. 210. 24 March, 1871, c. 5, s. 2, v. 17, p. 3.)

Mode of Payment.—SEC. 4935. Patent fees may be paid to the Commissioner of Patents, or to the Treasurer or any of the assistant treasurers of the United States, or to any of the designated depositaries, national banks, or receivers of public money, designated by the Secretary of the Treasury for that purpose; and such officer shall give the depositor a receipt or certificate of deposit therefor. All money received at the Patent Office, for any purpose, or from any source whatever, shall be paid into the Treasury as received, without any deduction whatever. (8 July, 1870, c. 230, s. 69, v. 16, p. 209.)

Refunding.—SEC. 4936. The Treasurer of the United States is authorized to pay back any sum or sums of money to any person who has through mistake paid the same into the Treasury, or to any receiver or depositary, to the credit of the Treasury, as for fees accruing at the Patent Office, upon a certificate thereof being made to the Treasurer by the Commissioner of Patents. (*Ibid.*, s. 70.)

Registration of Trade-marks.—SEC. 4937. Any person or firm domiciled in the United States and any corporation created by the authority of the United States, or of any State or Territory thereof, and any person, firm, or corporation resident of or located in any foreign country which by treaty or convention affords similar privileges to citizens of the United States, and who are entitled to the exclusive use of any lawful trade-mark, or who intend to adopt and use any trade-mark for exclusive use within the United States, may obtain protection for such lawful trade-mark by complying with the following requirements:

First. By causing to be recorded in the Patent Office a statement specifying the names of the parties, and their residences and place of business, who desire the protection of the trade-mark; the class of merchandise, and the particular description of goods comprised in such class, by which the trade-mark has been or is intended to be appropriated; a description of the trade-mark itself, with fac-similes thereof, showing the mode in which it has been or is intended to be applied and used; and the length of time, if any, during which the trade mark has been in use.

Second. By making payment of a fee of twenty-five dollars in the same manner and for the same purpose as the fee required for patents.

Third. By complying with such regulations as may be prescribed by the Commissioner of Patents. (*Ibid.*, s. 77, p. 10.)

Accompanying Declaration under Oath.—SEC. 4938. The certificate prescribed by the preceding section must, in order to create any right whatever in favor of the party filing it, be accompanied by a written declaration verified by the person, or by some member of the firm or officer of the corporation by whom it is filed, to the effect that the party claiming protection for the trade-mark has a right to the use of the same, and that no other person, firm, or corporation has the right to such use, either in the identical form or in any such near resemblance thereto as might be calculated to deceive; and that the description and fac-similes presented for record are true copies of the trade-mark sought to be protected. (8 Jul., 1870, c. 230, s. 77, v. 16, p. 210.)

Restriction on the Registration of Trade-marks.—SEC. 4939. The Commissioner of Patents shall not receive and record any proposed trade-mark which is not and cannot become a lawful trade-mark, or which is merely the name of a person, firm, or corporation unaccompanied by a mark sufficient to distinguish it from the same name when used by other persons, or which is identical with a trade-mark appropriate to the same class of merchandise and belonging to a different owner, and already registered or received for registration, or which so nearly resembles such last-mentioned trade mark as to be likely to deceive the public. But this section shall not prevent the registry of any lawful trade-mark rightfully in use on the eighth day of July, eighteen hundred and seventy. (*Ibid.*, s. 79, p. 211.)

Receipt of Trade-mark to be Certified.—SEC. 4940. The time of the receipt of any trade-mark at the Patent Office for registration shall be noted and recorded. Copies of the trade-mark and of the date of the receipt thereof, and of the statement filed therewith, under the seal of the Patent Office, certified by the Commissioner, shall be evidence in any suit in which such trade-mark shall be brought in controversy. (*Ibid.*, s. 80.)

Duration of Protection and Renewal.—SEC. 4941. A trade-mark registered as above prescribed shall remain in force for thirty years from the date of such registration; except in cases where such trade-mark is claimed for and applied to articles not manufactured in this country and in which it receives protection under the laws of any foreign country for a shorter period, in which case it shall cease to have any force in this country by virtue of this act at the same time that it becomes of no effect elsewhere. Such trade mark during the period that it remains in force shall entitle the person, firm, or corporation registering the same to the exclusive use thereof so far as regards the description of goods to which it is appropriated in the statement filed under oath as aforesaid, and no other person shall lawfully use the same trade-mark, or substantially the same, or so nearly resembling it as to be calculated to deceive, upon sub-

stantially the same description of goods. And at any time during the six months prior to the expiration of the term of thirty years, application may be made for a renewal of such registration, under regulations to be prescribed by the Commissioner of Patents. The fee for such renewal shall be the same as for the original registration; and a certificate of such renewal shall be issued in the same manner as for the original registration; and such trade-mark shall remain in force for a further term of thirty years. (*Ibid.*, s. 78, p. 211.)

Infringement of Trade-Marks.—**Sec. 4942.** Any person who shall reproduce, counterfeit, copy, or imitate any recorded trade-mark, and affix the same to substantially the same descriptive properties and qualities as those referred to in the registration, shall be liable to an action on the case for damages for such wrongful use of such trade-mark, at the suit of the owner thereof; and the party aggrieved shall also have his remedy according to the course of equity to enjoin the wrongful use of his trade-mark and to recover compensation therefor in any court having jurisdiction over the person guilty of such wrongful use. (8 July, 1870, c. 230, s. 79, v. 16, p. 211.)

Restriction upon Actions.—**Sec. 4943.** No action shall be maintained under the provisions of this chapter by any person claiming the exclusive right to any trade-mark which is used or claimed in any unlawful business, or upon any article which is injurious in itself, or upon any trade-mark which has been fraudulently obtained, or which has been formed and used with the design of deceiving the public in the purchase or use of any article of merchandise. (*Ibid.*, s. 84, p. 212.)

Penalty for False Registration.—**Sec. 4944.** Any person who shall procure the registry of any trade-mark, or of himself as the owner of a trade mark, or an entry respecting a trade-mark in the Patent Office, by making any false or fraudulent representations or declarations, verbally or in writing, or by any fraudulent means, shall be liable to pay any damages sustained in consequence of any such registry or entry, to the person injured thereby; to be recovered in an action on the case. (*Ibid.*, s. 82.)

Former Rights and Remedies Preserved.—**Sec. 4945.** Nothing in this chapter shall prevent, lessen, impeach, or avoid any remedy at law or in equity, which any party aggrieved by any wrongful use of any trade-mark might have had if the provisions of this chapter had not been enacted. (*Ibid.*, s. 83.)

Saying as to Rights after Expiration of Term.—**Sec. 4946.** Nothing in this chapter shall be construed by any court as abridging or in any manner affecting unfavorably the claim of any person to any trade-mark after the expiration of the term for which such trade-mark was registered. (8 July, 1870, c. 230, s. 78, v. 16, p. 211.)

Transfer of Rights to Trade-Marks.—**Sec. 4947.** The Commissioner of Patents is authorized to make rules, regulations, and prescribe forms for the transfer of the right to the use of trade-marks, conforming as nearly as practicable to the requirements of law respecting the transfer and transmission of copyrights. (*Ibid.*, s. 81.)

CHAP. 801.—An act to amend the law relating to patents, trade-marks, and copyrights.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That no person shall maintain an action for the infringement of his copyright unless he shall give notice thereof by inserting in the several copies of every edition published, on the title page or the page immediately following, if it be a book; or if a map, chart, musical composition, print, cut, engraving, photograph painting, drawing, chromo, statue, statuary, or model or design intended to be perfected and completed as a work of the fine arts, by inscribing upon some vis-

ible portion thereof, or of the substance on which the same shall be mounted, the following words, viz: "Entered according to act of Congress, in the year ——, by A. B., in the office of the Librarian of Congress, at Washington;" or, at his option the word "Copyright," together with the year the copyright was entered, and the name of the party by whom it was taken out; thus: "Copyright, 18—, by A. B."

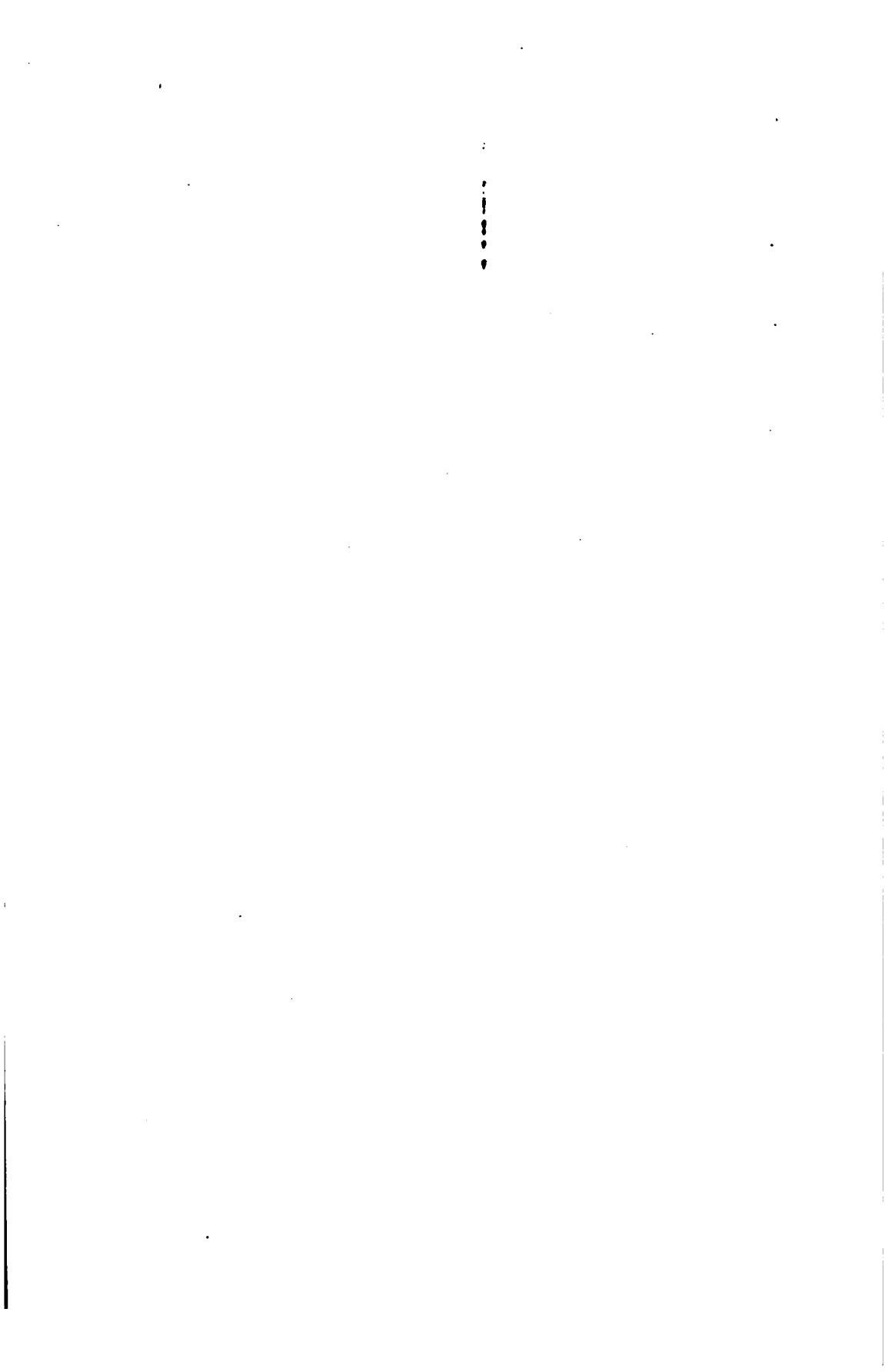
SEC. 2. That for recording and certifying any instrument of writing for the assignment of a copyright, the Librarian of Congress shall receive from the persons to whom the service is rendered, one dollar; and for every copy of an assignment, one dollar; said fee to cover, in either case, a certificate of the record, under seal of the Librarian of Congress; and all fees so received shall be paid into the Treasury of the United States.

Restrictions.—SEC. 3. That in the construction of this act the words, "engraving," "cut," and "print," shall be applied only to pictorial illustrations, or works connected with the fine arts, and no prints or labels designed to be used for any other articles of manufacture shall be entered under the copyright law, but may be registered in the Patent Office. And the Commissioner of Patents is hereby charged with the supervision and control of the entry or registry of such prints or labels, in conformity with the regulations provided by law as to copyright of prints, except that there shall be paid for recording the title of any print or label not a trade mark, six dollars, which shall cover the expense of furnishing a copy of the record under the seal of the Commissioner of Patents, to the party entering the same.

SEC. 4. That all laws and parts of laws inconsistent with the foregoing provisions be and the same are hereby repealed.

SEC. 5. That this act shall take effect on and after the first day of August, eighteen hundred and seventy-four.

Approved June 18, 1874.



DIGESTED ABSTRACT.

ABANDONMENT OF EXPERIMENTS.

1. Where a patent has been granted for improvements, which, after a full and fair trial, resulted in unsuccessful experiments, and have been finally abandoned, if any other person takes up the subject of the improvements, and is successful, he is entitled to the merit of them as an original inventor. *Whitely v. Swayne*, 208.
2. Desertion of an alleged prior invention, consisting of a machine never patented, may be proved by showing that the inventor, after constructing it, broke it up or laid it aside, as something requiring more thought and experiment; provided it appears that those acts were done without any definite intention of resuming his experiments. *Seymour v. Osborne*, 292.

See PRIOR USE; REDUCTION TO PRACTICE.

ABANDONMENT OF INVENTION.

1. Where a party having made application for a patent for certain improvements, afterwards, *with his claim still on file*, makes application for another but distinct improvement in the same branch of art, in which second application he describes the former improvement, but does not in such second application claim it as original, the description in such second application and non-claim of it there, is not a dedication of the first invention to the public. *Suffolk Co. v. Hayden*, 140.
2. Forbearance to apply for a patent during the progress of experiments, and until the party has perfected his invention and tested its value by practical experiment, affords no ground for presumption of abandonment. *Agawam Co. v. Jordan*, 187.

See APPLICATION, 1; EQUITY, 6, 7; PRIOR USE.

ACCOUNT OF PROFITS.

1. In taking an account, the master is not limited to the date of entering the decree; he can extend it down to the time of the hearing before him. *Rubber Co. v. Goodyear*, 237.
2. An objection that the word "patented" was not affixed by the complainant, under section 13 of the act of March 2d, 1861, must be taken in the answer, if it is intended to be raised at the hearing or before the master. *Ibid.*
3. Profits are rightly estimated by the master by finding the difference between cost and sales. *Ibid.*
4. A decree "for all the profits made in violation of the rights of the complainants under the patents aforesaid, by respondents, by the manufacture, use, or sale of any of the articles named in the bill of complaint," is correct in form. *Ibid.*
5. In estimating the cost, the elements of cost of materials, interest, expense of manufacture and sale, and bad debts, considered by a manufacturer in finding his profits, are to be taken into account, and no others. *Ibid.*
6. Interest on capital stock and "manufacturer's profits" were properly disallowed by the master. *Ibid.*
7. Profits due to elements not patented, which entered into the composition of the patented article, may sometimes be allowed. They were, however, properly disallowed in this particular case. *Ibid.*
8. Extraordinary salaries were properly disallowed by the master, on the ground that they were dividends of profit under another name. *Ibid.*

ACCOUNT OF PROFITS—*continued.*

9. "Profit" is the gain made upon any business or investment, when both the receipts and payments were taken into the account. *Ibid.*, 249.
10. It is as true of a process, invented as an improvement in a manufacture, as it is of an improvement in a machine, that an infringer is not liable to the extent of his entire profits in the manufacture. *Mowry v. Whitney*, 410.
11. In such a case the question to be determined is, what advantage did the infringer derive from using the invention, over what he had in using other processes then open to the public, and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits, and that advantage is the measure of profits to be accounted for. *Ibid.*
12. The profits recoverable from an infringer are the measure of the patentee's damages, and though called *profits*, are really *damages*, and unliquidated until a final decree is made. *Ibid.*
13. Interest upon unliquidated damages is not generally allowable, and should not be allowed before a final decree for profits. *Ibid.*

See DAMAGES; EQUITY, 1; INFRINGEMENT, 1.

ACTIONS.

1. Under the fourteenth section of the Patent Act of 1836, enacting that damages may be recovered by action on the case, to be brought in the name of the person "interested," the original owner of the patent, who has afterwards sold his right, may recover for an infringement committed during the time that he was owner. The word "interested" means interested in the patent at the time when the infringement was committed. *Moore v. Marsh*, 180.
2. Where the patentee has assigned his whole interest, either before or after the patent is issued, the action must be brought in the name of the assignee, because he alone was interested in the patent at the time the infringement took place; but where the assignment is of an undivided part of the patent, the action should be brought for every infringement committed subsequent to the assignment, in the joint names of the patentee and assignee, as representing the entire interest. *Ibid.*, 185.
3. Settled view at one time was, that the grantee of a territorial right, for a particular district, could not bring an action on the patent in his own name; but the act of Congress having made him a party interested in the patent, it is now equally well settled that he may sue in his own name for invasion of the patent in that territorial district, as no one else is injured by any such infringement. *Ibid.*, 185.
4. Subsequent sale and transfer of the exclusive right are no bar to an action to recover damages for an infringement committed before such sale and transfer. *Ibid.*, 186.
5. Suits for infringement committed subsequent to a grant can only be brought in the name of the grantee, as it is clear that no one can maintain such an action until his rights have been invaded, nor until he is interested in the damages to be recovered. *Ibid.*, 185.
6. The true meaning of the word "interested," as employed in the last clause of the fourteenth section of the Patent Act, when properly understood and applied, is, that the right of action is given to the person or persons owning the exclusive right at the time the infringement is committed. *Ibid.*, 186.

See AGREEMENT, 4; APPEALS; DAMAGES; INFRINGEMENT; NOTICE OF SPECIAL MATTER.

ADMINISTRATORS AND EXECUTORS.

1. Where a patentee dies, the surrogate of the place where the decedent was domiciled properly has jurisdiction to take probate of his will and issue letters testamentary. *Rubber Company v. Goodyear*, 237.

ADMINISTRATORS AND EXECUTORS—*continued.*

2. Where several executors are appointed by the will of a patentee decedent—provision being made, however, for one alone acting—and but one proves the will and receives the letters of administration, he alone can maintain an action for infringement of the letters patent at common law. *Ibid.*
3. Under the laws of the United States, where a patent is granted to C. G. as executor, he can maintain a suit on the patent in all respects as if he had been designated in the patent as trustee instead of executor. *Ibid.*
4. An objection to the authority of an executor to maintain a suit on letters patent should be taken by a plea in abatement. *Ibid.*

ADMISSIONS IN ANSWER.

See EQUITY, 1, 2.

AGREEMENT.

1. Where the purchaser of a claim for a patent agrees that, as soon as the patent is issued, he will give his notes, payable at a future date, the fact that no patent has issued until *after* the day when the last note, if given, would have been payable, is no defense to *assumpsit* for not having given the notes; the patent having finally issued in form. *Read v. Bowman*, 129.
2. The practical construction which the parties themselves have given to a contract by their own conduct is, in cases of doubt, always entitled to great weight. *Rubber Company v. Goodyear*, 246.
3. Where there is doubt as to the proper meaning of an instrument, the construction which the parties to it have themselves put upon it, is entitled to great consideration; but where its meaning is clear, an erroneous construction of it by them will not control its effect. *Railroad Company v. Trimble*, 274.
4. Where the owner of a patent granted the portion of his interest in it to another person in consideration of certain payments to be made by such person to third parties, and certain promises and agreements then made by him; and such person never made any of the payments which he was thus required to make, and by common consent of the grantor and grantees, the contract never went into operation in any way, because the grantees were unable to comply with any of his engagements, so that the grantor was compelled to pay, and did pay, the money which the grantees had agreed to pay; and the grantees during his lifetime never claimed any interest in the contract, but, on the contrary, always recognized the grantor's exclusive right, and acted as his agent in the patent, under a power of attorney, paying him a part of the profits for the privilege: *Held*, after the grantees' death, that the agreement did not prevent the grantor's bringing suit for the infringement of the patent without naming the grantees. *Ibid.*
5. A contract in writing may be binding on a corporation though a private seal of one of its officers was used instead of the corporate seal, and though no record may be found authorizing the officer to make the contract, if other evidence proves that he had such authority, or that the company ratified his act afterwards. *Eureka Company v. Bailey Company*, 287.
6. When parties have, after long negotiation, with full opportunities for knowing what they are doing, entered into contracts for the use of inventions covered by rival patents, and no fraud or imposition is alleged, the case of a party sued in such a contract must be very clear, who denies the validity of the patent for which he has agreed to pay a royalty. *Ibid.*
7. And when such a party has furnished under the contract a model of the machines which he proposes to make, on which he agrees to pay a royalty, he cannot deny that such machine contains matter covered by the patent, unless he alleges and proves circumstances which would set aside the contract for fraud, mistake, or surprise. *Ibid.*

ACCOUNT OF PROFITS—*continued.*

9. "Profit" is the gain made upon any business or investment, when both the receipts and payments were taken into the account. *Ibid.*, 219.
10. It is as true of a process, invented as an improvement in a manufacture, as it is of an improvement in a machine, that an infringer is not liable to the extent of his entire profits in the manufacture. *Mowry v. Whitney*, 410.
11. In such a case the question to be determined is, what advantage did the infringer derive from using the invention, over what he had in using other processes then open to the public, and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits, and that advantage is the measure of profits to be accounted for. *Ibid.*
12. The profits recoverable from an infringer are the measure of the patentee's damages, and though called *profits*, are really *damages*, and unliquidated until a final decree is made. *Ibid.*
13. Interest upon unliquidated damages is not generally allowable, and should not be allowed before a final decree for profits. *Ibid.*

See DAMAGES; EQUITY, 1; INFRINGEMENT, 1.

ACTIONS.

1. Under the fourteenth section of the Patent Act of 1836, enacting that damages may be recovered by action on the case, to be brought in the name of the person "interested," the original owner of the patent, who has afterwards sold his right, may recover for an infringement committed during the time that he was owner. The word "interested" means interested in the patent at the time when the infringement was committed. *Moore v. Marsh*, 180.
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ADMISSIONS IN ANSWER.

See *Equiry*, 1, 2.

AGREEMENT.

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AGREEMENT—*continued.*

8. The army regulation No. 1002, which declares that "no officer or agent in the military service shall purchase from any other person in the military service or make any contract with any such person to furnish supplies or services, or make any purchase or contract in which such person shall be admitted to any share or part, or to any benefit to arise therefrom," does not apply to contracts on behalf of the United States, with an officer of the army of the United States for the manufacture and use of a patented article which requires for its validity the approval of the Secretary of War. The secretary, though the head of the War Department, is not in the military service in the sense of the regulation, but is a civil officer. *United States v. Burns*, 344.
9. In February, 1858, a contract was made on behalf of the United States with Sibley, an officer in the army of the United States, for the manufacture and use of what is known as the Sibley tent, of which tent Sibley had secured a patent, by which contract the government was authorized to make and procure as many of the tents as it might require by paying the sum of five dollars for each tent, the contract to continue until the 1st of January, 1859, and longer unless the United States were notified to the contrary. In April, 1858, Sibley executed to Burns, another officer in the army of the United States, an assignment of "the one-half interest in all the benefits and net profits arising from and belonging to the invention," from and after February 22, 1856. Soon after the commencement of the rebellion Sibley resigned his commission in the army of the United States and joined the Confederates. Burns remained true in his allegiance to the government of the United States and served in the army of the Union. After the resignation and defection of Sibley, one half of the royalty on each tent made or procured by the government was paid to Burns, under the contract with Sibley, until December 26th, 1861, when further payments to him were forbidden by order of the Secretary of War, although the government continued to manufacture and use the tents as previously: *Held*, 1st, that the assignment of Sibley passed to Burns one-half interest in the contract of Sibley with the government, and the right to a moiety of the royalty stipulated; 2d, that the order of the Secretary of War, in December, 1861, did not terminate the contract; 3d, that the War Department, by its previous payments to Burns of one-half of the royalty stipulated, severed his claim from that of Sibley under the contract; 4th, that the act of March 3d, 1863, in barring Sibley, by reason of his disloyalty, of any action upon the contract with the government in the Court of Claims, does not affect the right of Burns to his moiety under that contract or his right of action for the same in the Court of Claims. The act severs their claims. *Ibid.*
10. The technical rule of pleading in an action in a common-law court, by which a contract with two must be prosecuted in their joint names, if both are living, has no application to a case thus situated. And the Court of Claims, in deciding upon the rights of the claimants, is not bound by any special rules of pleading. *Ibid.*, 350.
11. Where a person, on a given contract, covenants to pay a sum whose amount is to be contingent on certain events, and is to be ascertained by arbitrators, such person, if he present any arbitration, may be sued at law on a *quantum valebat*, and the sum due may be ascertained by a jury under instructions from the court. If the jury, under such instructions, find that only so much is due, the plaintiff can recover nothing more. *Hunaston v. Telegraph Company*, 622.
12. A contract of a special nature explained and interpreted so as to sustain a charge under which, in a case like that just stated, the jury found as due much less than the plaintiff claimed. *Ibid.*
13. Where a person in consideration of property (not money) to be assigned by another, agrees to give a certain number of shares of stock, having on the day of

AGREEMENT—continued.

the contract a fixed market value, and, refusing to give the stock, is sued at law for a breach of the contract, evidence of the value of the stock at any other time than at the date of the contract is rightly excluded; its value at that date being agreed on and admitted. *Ibid.*

See **ASSIGNMENT; DEED; LICENSE.**

ANSWER.

See **ACCOUNT OF PROFITS, 2; EQUITY, 1, 2, 5, 6, 14; NOTICE OF SPECIAL MATTER.**

ANNULMENT OF PATENT.

See **REPEAL OF PATENT.**

APPEAL BOND.

1. The question of sufficiency of an appeal bond is to be determined in the first instance by the judge who signs the citation; but after the allowance of the appeal it becomes cognizable here. It is not required that the security be in any fixed proportion to the amount of the decree; but only that it be sufficient. Where a decree had been for a large sum, (\$310,752,) security in less than double the amount was accepted by this court, and the appellants allowed to withdraw a bond given in such double sum. *Rubber Company v. Goodyear*, 171.

APPEALS.

1. An appeal upon a bill for the infringement of a patent dismissed, it appearing that after the appeal the appellants had purchased a certain patent of the defendants, under which the defendants sought to protect themselves; and that the defendants as compensation had taken stock in the company which had successfully sought to enjoin them, and was now appellant in the case. *Wood-paper Co. v. Heft*, 220.
2. The fact that *damages* for the infringement alleged in the bill had not been compromised, held not to affect the propriety of the dismissal. *Ibid.*
3. The right given by the acts of February 18th, 1861, and July 20th, 1870, of appeal or writ of error without regard to the sum in controversy in questions arising under laws of the United States, granting or conferring to authors or inventors the exclusive right to their inventions or discoveries, applies to controversies between a patentee or author and alleged infringer as well as to those between rival patentees. *Philp et al. v. Nock*, 351.

See **APPEAL BOND; MANDAMUS; REISSUE, 9.**

APPLICATION.

1. If an applicant for a patent choose to withdraw his application for a patent, intending, at the time of such withdrawal, to file a new petition, and he accordingly does so, the two petitions are to be considered as parts of the same transaction, and both as constituting one continuous application, within the meaning of the seventh sections of the Patent Acts of 1836 and 1839. *CLIFFORD, J., dissenting. Godfrey v. Eames*, 34.
2. The question of the continuity of the application is a question to be submitted to the jury. *Ibid.*
3. The Patent Bureau in this country is composed of men of scientific attainments, who examine the merits of every claimant of a patent, and decide whether, in their opinion, it attempts to claim a monopoly of things before known or invented. They are not expected, as formerly, to grant a patent without inquiring, to every applicant who is ready to pay the fees. Such a course of conduct would be highly injurious to the public, by furnishing means to impose on the public by false pretenses, and with threats of expensive and ruinous litigation. *Burr v. Duryee*, 106.
4. Where the Patent Office grants a patent for one invention, and afterwards, upon

APPLICATION—*continued.*

- 1. a claim filed previously to that on which such patent has been granted, issues another, the second patent, not the first, is void. *Suffolk Co. v. Hayden*, 141.
- 2. It is the first duty of the Commissioner to receive an application, whatever he may do subsequently. Without this initial step there could be no examination, and, indeed, no rightful knowledge of the subject on his part. *Commissioner of Patents v. Whiteley*, 153.
- 3. Application for a patent is required to be made to the Commissioner appointed under authority of law, and inasmuch as that officer is empowered to decide upon the merits of the application, his decision in granting the patent is presumed to be correct. *Agawam Co. v. Jordan*, 198.
- 4. Whether a given invention or improvement shall be embraced in one, two, or more patents, is a matter about which some discretion must be left with the head of the Patent Office; it being often a nice and perplexing question, and one not capable of being prescribed for by a general rule. *Bennet v. Fowler*, 231.
- 5. Accordingly, in a case where two reissued patents, both related to the lifting and depositing a load of hay in a mow of a barn, or in a rick or shed, but in one of them the lifter was somewhat differently constructed, so as to adapt it specially to the stacking of hay, (which, as this court assumed, had doubtless led the office to divide the improvements, and issue separate patents, in a case where the improvements had been embraced in one in the original patent,) the reissue in the twofold form was held proper. *Ibid.*

See ABANDONMENT OF INVENTION; CONSTRUCTION OF PATENT; MANDAMUS, 2; REISSUE.

ARBITRATION.

- 1. The practice of referring pending actions under a rule of court to arbitrators appointed by the court, with the consent of both parties, is a mode of prosecuting a suit to judgment as well established and as fully warranted as a trial by jury. *Heckers v. Fowler*, 113.
- 2. A reference to hear and determine all the issues in a case does not require the referee to report his finding in all. It is answered by his hearing and determining all, and reporting the result. *Ibid.*
- 3. A judgment of the circuit court, entered by the clerk without objection upon the report of the referee, and pursuant to order of court and the agreement of parties, is valid, and can be enforced. *Ibid.*

ASSIGNEE.

See ACTION; ASSIGNMENT, REISSUE, 9, 10.

ASSIGNMENT.

- 1. A grant of a right by a patentee to make and use, and vend to others to be used, a patented machine, within a term for which it has been granted, will give the purchaser of machines from such grantees the right to use the *machine patented as long as the machine itself lasts*; nor will this right to use a machine cease because an extension of the patent, not provided for when the patentee made his grant, has since been allowed, and the machine sold has lasted and is used by the purchaser within the term of time covered by this extension: the rule being distinguishable from that applied to the assignee of the right to *make and vend* the thing patented, who holds a portion of the franchise which the patent confers, and whose right, of course, terminates with the term of the patent, unless there is a stipulation to the contrary. *Bloomer v. Millinger*, 42.
- 2. A deed by which a patentee of an invention conveys all the right, title, and interest which he has in the "said invention," as secured to him by letters patent, and also all "right, title, and interest, which may be secured to him from time to time," the same to be held by the assignee for his own use and for that of his legal representatives, "to the full end of the term for which said letters patent

ASSIGNMENT—continued.

- are or may be granted," carries the entire invention and all alterations and improvements, and all patents whosoever issued and extensions alike, to the extent of the territory specified. Railroad Co. v. Trimble, 274.*
3. A grant by a patentee of an extension of a patent, before any extension has issued, will carry, if the terms of the grant be proper ones, the legal as well as the equitable interest in the patent. *Ibid.*
 4. The effect of such a contract has been settled by this court in *Gayler v. Wilder* and others, 10 Howard, 477. The argument which controlled the judgment of the court in that case may be thus stated: Fitzgerald had an inchoate right at the time of the assignment, the invention being then complete and the specification prepared. It appeared, by the language of the assignment, that it was intended to operate upon the perfect legal title, which he then had a lawful right to obtain, as well as upon the inchoate right which he then possessed. There was no sound reason for defeating the intention of the parties by restricting the assignment to the latter interest and compelling the parties to execute another transfer, unless the act of Congress required it, which, in the opinion of the court, it did not. The act of 1836 declared that every patent shall be assignable in law. The thing to be assigned is not the mere parchment on which the grant is written, but the monopoly which the grant confers—the right of property which it creates—and when the party has acquired an inchoate right to it, and the power to make that right perfect and absolute at his pleasure, the assignment of his whole interest, whether executed before or after the patent issued, is equally within the provisions of the act of Congress. *Ibid.*, 284.
 5. The rule laid down in *Gayler v. Wilder* is the law of this tribunal upon the subject. There the patent was an original one; here it is an extension. The question arises under the 11th and 18th sections of the act of 1836. But the arguments which controlled the decision in that case apply in this with equal force. The same considerations are involved in both. There is no substantial ground of distinction. The application of the same principle to the assignment of an extended patent, made before the extension, is an inevitable corollary from the reasoning of the court. *Ibid.*, 285.
 6. The case of *Wilson v. Rousseau*, 4 Howard, 682, did not turn upon the question considered in the case of *Railroad Company v. Trimble*, and it contains nothing in conflict with the proposition established in *Gayler v. Wilder*. *Ibid.*
 7. An assignment of a reissued patent, reciting the date and number of the reissue, and that the original patent had been "given for the term of fourteen years;" reciting that the assignee had agreed to purchase all the right, title, and interest which the patentee had "in the said invention as secured by the said letters patent;" and transferring to the assignee all the right, title, and interest which the patentee has "in the said invention and letters patent;" "the same to be held and enjoyed by the said party for the use and behoof of him and his legal representatives to the full end of the term for which the said letters patent are or may be granted, as fully and effectively as the same would have been held and enjoyed by the assignor had the assignment never been made," will transfer an extension and renewal of the patent made under the acts of July 4th, 1836, and of May 27th, 1848; and this though the patent be reissued subsequently to the assignment. *Nicolson Pavement Company v. Jenkins*, 388.
 8. The case of *The Railroad Company v. Trimble*, 10 Wallace, 367, is not different in principle from this, although in that case the language is somewhat broader. *Ibid.*, 392.
 9. A patentee of certain machines, whose original patent had still between six and seven years to run, conveyed to another person the "right to make and use and to license to others the right to make and use four of the machines" in two States "during the remainder of the original term of the letters patent, provided, that

ASSIGNMENT—*continued*.

- the said grantee shall not in any way or form dispose of, sell, or grant any license to use the said machines *beyond* the said term." The patent having, towards the expiration of the original term, been extended for seven years, *held*, that an injunction by a grantee of the extended term would lay to restrain the use of the four machines, they being in use after the term of the original patent had expired. *Mitchell v. Hawley*, 443.
10. When a patentee has himself constructed the thing patented, and sold it without any conditions, or authorized another to construct, sell, and deliver it, or to construct, and use, and operate it without any conditions, and the consideration has been paid to him for the thing patented, the rule is well established that the patentee must be understood to have parted to that extent with all his exclusive right, and that he ceases to have any interest whatever in the patented machine so sold and delivered, or authorized to be constructed and operated. *Ibid.*, 445.
11. Where such circumstances appear, the owner of the machine, whether he built it or purchased it, if he has also acquired the right to use and operate it during the lifetime of the patent, may continue to use it until it is worn out, in spite of any and every extension subsequently obtained by the patentee or his assigns. *Ibid.*
12. Purchasers of the exclusive privilege of making or vending the patented machine, hold the whole or a portion of the franchise which the patent secures, depending upon the nature of the conveyance, and of course the interest which the purchaser acquires terminates at the time limited for its continuance by the law which created the franchise, unless it is expressly stipulated to the contrary. *Ibid.*, 446.
13. The purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life stands on different grounds, as he does not acquire any right to construct another machine, either for his own use or to be vended to another for any purpose. *Ibid.*
14. When the machine passes from the patentee to the purchaser, it ceases to be within the limits of the monopoly. *Ibid.*
15. Patented implements or machines sold to be used in the ordinary pursuits of life become the private individual property of the purchasers, and are no longer specifically prohibited by the patent laws of the State where the implements or machines are known and used. *Ibid.*
16. Sales may be made by the patentee with or without conditions, as in other cases; but where the sale is absolute, and without any conditions, the rule is well settled that the purchaser may continue to use the implement or machine purchased until it is worn out, or he may repair it or improve upon it, as the pleases in the same manner as if dealing with property of any other kind. *Ibid.*
17. Where a patentee has assigned his right to manufacture, sell, and use within a limited district an instrument, machine, or other manufactured product, a purchaser of such instrument or machine, when rightfully bought within the prescribed limits, acquires by such purchase the right to *use* it anywhere, without reference to other assignments of territorial rights by the same patentee. *Adams v. Burke*, 449.
18. The right to the *use* of such machines or instruments stands on a different ground from the right to make and sell them, and inheres in the nature of a contract of purchase, which carries no implied limitation of the right of use within a given locality. *Ibid.*
19. It has been repeatedly held that where a person had purchased a patented machine of the patentee or his assignee, this purchase carried with it the right to the use of that machine so long as it was capable of use, and that the expiration and renewal of the patent, whether in favor of the original patentee or of his assignee, did not affect this right. The true ground on which these decisions rest is that the sale by a person who has the full right to make, sell, and use

ASSIGNMENT—continued.

- such a machine carries with it the right to the use of that machine to the full extent to which it can be used in point of time. *Ibid.*, 450.
20. The right to manufacture, the right to sell, and the right to use are each substantive rights, and may be granted or conferred separately by the patentee. *Ibid.*, 451.
21. Where a person during the original term of a patent bought from one who had no right to sell it, a machine which was an infringement of the patent, and afterwards himself bought the patent for the county where he was using the machine: *Held*, that on an extension of the patent the owners of the extension could not recover against him for using the machine after the original term had expired; but that such purchase of the interest in the patent removed, as to the purchaser, all disability growing out of the wrongful construction of the machine then used by him, and rendered the use of it legal. *Eunson v. Dodge*, 469.
22. This court has decided many times that the eighteenth section of the Patent Act of 1836 gives to an assignee of the patent during the original term the right to continue during the extended term the use of a machine used by him during the original term. *Ibid.*, 471.

See ACTIONS; AGREEMENT; DAMAGES, 3; DEED; REISSUE, 9, 10.

ASSIGNMENT OF ERRORS.

Where on a trial for infringement of a reissue of letters patent—the defense being a want of novelty—a defendant requests the court below to direct the jury to bring in a verdict for the defendant, (no objection being then or having during the trial been taken by such defendant, that the reissue was for a different invention from that secured by the original patent,) and the request for the direction just stated not having been on that ground, but on the ground of the evidence "relative to the alleged prior use of the process, and the novelty and usefulness, character and effect of the alleged invention being so decisive as to entitle the defendant to a verdict"—and the request has been refused—the defendant cannot assign as error the refusal to give the direction, because the reissue was not for the same invention as was the original patent. *Klein v. Russell*, 587.

BILL OF EXCEPTIONS.

1. Where a bill of exceptions sets out that a witness was offered, was objected to on the ground of incompetency, and rejected by the court below, but does not state what facts he was called to prove, this court will not presume that his testimony would have been immaterial if it had been heard. *Vance v. Campbell*, 10.
2. Where a bill of exceptions sets forth that a witness was produced, was asserted to be competent by his counsel, and was rejected by the court, a court of error will imply that the witness was material to sustain the issue, without a direct statement to that effect in the bill of exceptions. Brevity in bills of exception commended. *Haussknecht v. Claypool et al.*, 13.
3. Whilst the right to plead the statutes of limitations is no more within the discretion of the court than other pleas, when the refusal of the court to permit that plea to be filed is based upon the allegation that it is not filed within the time prescribed by rules of practice adopted in that court, it is necessary that the party excepting to the refusal shall incorporate the rule in his bill of exceptions, or this court will presume that the court below construed correctly its own rules. *Packet Company v. Sickles*, 616.

BILL OF REVIEW.

A bill of review will not be granted either where the party could by an attentive examination of the exhibits, attached to the bill in the original case, have dis-

BILL OF REVIEW—*continued.*

covered what he relies on as newly discovered matter, and has thus been guilty of laches; or where the court is satisfied that upon the case offered to be made out, the decree ought to be the same as has been already given. *Rubber Co. v. Goodyear*, 250.

CASES COMMENTED ON.

1. The fact that there was considerable diversity of opinion among the judges in disposing of the case of *Bloomer v. McQuewan*, 14 How., 549, is entitled to no weight, because the court has since unanimously affirmed the same rule. *Bloomer v. Millinger*, 51.
2. "We have already had occasion to remark in a late case (*Burr v. Duryee*, 1 Wallace, 535) on this new art of expanding patents for machines into patents for 'a mode of operation,' a function, a principle, an effect or result, so that by an equivocal use of the term 'equivalent' a patentee of an improved machine may suppress all further improvements. It is not necessary again to expose the fallacy of the argument by which these attempts are sought to be supported though we cannot hinder their repetition." *Case v. Brown*, 129.

See ASSIGNMENT, 4, 5, 6, 8; COMBINATION, 5, 7; CONSTRUCTION OF PATENT, 7, 8; DAMAGES, 8, 9; DESIGN, 5; EVIDENCE, 16; MANDAMUS, 1; PRINCIPLE, 2; PRIOR USE, 5.

See TABLE OF CASES

CHARGE OF JUDGE.

1. A direction to find for one party or the other can only be given where there is no conflict of evidence. *Klein v. Russell*, 588.
2. Where a specification in describing the mode of treating articles with a patented process (a liquid) said that, "it is desirable to heat the latter *to or near the boiling point*," and there was testimony that if applied while in that state to the articles to be treated it would greatly injure them, as also that if it was suffered to cool before being applied it possessed virtue, a request which asked the court to charge that the proper construction of the patent is that if the liquid applied at such a temperature is injurious and pernicious, the patent is void for want of utility, is rightly modified by a change which makes the charge say to the jury that the proper construction is that the liquid should be applied at or near the boiling-point under the *common knowledge of persons skilled in the art* of treating the articles to be effected and to procure the desired results, and in reference to the fact whether such knowledge would make them wait until it was partially cooled before its application; and that if the application of the liquid at such a temperature as is required by the specification, *under this qualification*, was injurious and pernicious, then that patent was void for the want of utility. *Ibid.*
3. A court is not bound to comply with requests for charges on points not raised by the evidence; nor when it has charged generally on the subject in its general charge, to repeat itself by answering requests for the same instructions. *Ibid.*, 589.
4. Where one claim of a patent was for the treatment by a compound composed of a liquid and other ingredients mentioned, a request for an instruction that the addition to the liquid of the ingredients is not patentable if such addition does not change the properties of the liquid, or its effect or usefulness, when applied to the *purposes mentioned in the patent*, is rightly modified by charging as requested with the addition of the words "*or to other like purposes*." *Ibid.*, 588.

See CONSTRUCTION OF PATENT, 3, 4, 5, 6; EVIDENCE, 13, 14, 15, 16.

CHEMICAL COMBINATIONS.

. See COMPOSITION OF MATTER; EQUIVALENT, 3, 4; JURY, 4; SPECIFICATION, 2, 3, 24.

CLAIM.

See CONSTRUCTION OF PATENT; PARTICULAR PATENT, 2; SPECIFICATION.

COMBINATION.

1. Where a patentee, suing for an infringement of his patent, declares upon a combination of elements which he asserts constitute the novelty of his invention, he cannot, in his proofs, abandon a part of such combination, and maintain his claim as to the rest. *Vance v. Campbell*, 9.
2. Much less can he prove any part of the combination immaterial or useless. *Ibid.*, 10.
3. The combination is an entirety: if one of the elements be given up, the thing claimed disappears. *Ibid.*
4. The 9th section of the act of 1837, (5 U. S. Stat., p. 194.) which provides that the suit shall not be defeated where the patentee claims more than he has invented, applies only to cases where the part invented can be clearly distinguished from that claimed but not invented. *Ibid.*
5. The law is well settled by repeated adjudications in the Supreme Court and Circuit Courts of the United States, that there is no infringement of a patent which claims mechanical powers in combination unless all the parts have been substantially used. The use of a part less than the whole is no infringement. *Prouty & Mears v. Ruggles*, 16 Peters, 341, cited in support of this point. *Eames v. Godfrey*, 25.
6. Where a patent is for a combination of distinct and designated parts, it is not infringed by a combination which varies from that patented, in the omission of one of the operative parts and the substitution therefor of another part substantially different in its construction and operation, but serving the same purpose. *Ibid.*, 24.
7. A claim for a combination of several devices, so combined together as to produce a particular result, is not good as a claim for "any mode of combining those devices which would produce that result," and can only be sustained as a valid claim for the peculiar combination of devices invented and described. *Burr v. Duryee*, 1 Wallace, 553, affirmed and applied. *Case v. Brown*, 122.
8. Where a roller in a particular combination had been used before without designs on it, and a roller with designs on it had also been used in another combination, it was not a patentable invention to place designs on the roller in the first named combination. Such a change, with the existing knowledge in the art, involved simply mechanical skill, which is not patentable. *Stimpson v. Woodward*, 259.
9. Changes in the construction and operation of an old machine, so as to adapt it to a new and valuable use which the old machine had not, are patentable, and may consist either in a material modification of old devices, or in a new and useful combination of the several parts of the old machine. *Seymour v. Osborne*, 292.
10. Actual inventors of a combination of two or more ingredients in a machine, secured by letters patent in due form, are entitled, even though the ingredients are old, if the combination produces a new and useful result, to treat every one as an infringer who makes and uses or vends the machine to others to be used without their authority or license; but they cannot suppress subsequent improvements which are substantially different, whether the new improvements consist in a new combination of the same ingredients, or of the substitution of some newly-discovered ingredient, or of some old one, performing some new function not known at the date of the letters patent as a proper substitute for the ingredient withdrawn from the combination constituting the invention. *Ibid.*, 322.
11. Where three elements are claimed in a patent, in combination, the use of two of the elements only does not infringe the patent. *Gould v. Rees*, 437.

COMBINATION—*continued.*

12. Unquestionably the withdrawal of one ingredient in a patented combination and the substitution of another which was well known at the date of the patent as a proper substitute for the one withdrawn, is a mere formal alteration of the combination; and if the ingredient substituted performs substantially the same function as the one withdrawn, such a substitution of one ingredient for another would not avoid the charge of infringement. *Ibid.*, 442
13. If the combination constituting the invention claimed in the subsequent patent was new, or if the ingredient substituted for the one withdrawn was a newly discovered one, or even an old one performing some new function, and was not known at the date of the plaintiff's patent, as a proper substitute for the ingredient withdrawn, it would avoid the infringement. *Ibid.*
14. Such an alteration is not a mere formal alteration, as the difference between the two improvements is such that the new combination would be the proper subject of a patent, and consequently would avoid the charge of infringement in a case like the one supposed by the court. *Ibid.*
15. Where the defendant in constructing his machine omits entirely one of the ingredients of the plaintiff's combination, without substituting any other, he does not infringe; and if he substitutes another in place of the one omitted, which is new, or which performs a substantially different function, or if it is old, but was not known at the date of the plaintiff's invention as a proper substitute for the omitted ingredient, then he does not infringe. *Ibid.*, 443
16. A new combination, if it produces new and useful results, is patentable, though all the constituents of the combination were well known and in common use before the combination was made, but the results must be a product of the combination, and not a mere aggregate of several results, each the complete product of one of the combined elements. *Hailes v. Van Wormer*, 640.
17. Merely bringing old devices into juxtaposition, and there allowing each to work out its own effect without the production of something novel, is not invention. *Ibid.*
18. No one, by bringing together several old devices without producing a new and useful result, the joint product of the elements of the combination, and something more than an aggregate of old results, can acquire a right to prevent others from using the same devices, either singly or in other combinations, or, even if a new and useful result is obtained, can prevent others from using some of the devices, omitting others in combination. *Ibid.*

See COMPOSITION OF MATTER; EQUIVALENT, 2, 5, 7; INFRINGEMENT, 1, 9; SPECIFICATION, 2, 7, 8, 14.

COMMISSIONER OF PATENTS.

See APPLICATION, 5, 6, 7; EXTENSION, 3; REISSUE, 8, 9, 10, 11, 14, 21; REPEAL OF PATENT, 4.

COMPOSITION OF MATTER.

A machine which consists of a combination of devices is the subject of invention, and its effects may be calculated *a priori*, while a discovery of a new substance by means of chemical combinations of known materials is empirical, and discovered by experiment. *Tyler v. Boston*, 179.

See EQUIVALENT, 3, 4; JURY, 4; SPECIFICATION, 2, 3, 24.

CONSTRUCTION OF CONTRACT.

See ACTION; AGREEMENT; ASSIGNMENT; DEED; LICENSE.

CONSTRUCTION OF PATENT.

1. Patents for inventions are not to be treated as mere monopolies, and therefore as odious in the law, but are to receive a liberal construction, and under a fair application of the rule that they be construed *ut res magis valeat quam pereat*.

CONSTRUCTION OF PATENT—*continued.*

Hence, where the "claim" immediately follows the description, it may be construed in connection with the explanations contained in the specification, and be restricted accordingly. *Turrill v. Michigan Southern, &c., Railroad Company*, 51.

2. A patent should be construed in a liberal spirit to sustain the just claims of the inventor. This principle is not to be carried so far as to exclude what is in it, or to interpolate anything which it does not contain. But liberality, rather than strictness, should prevail where the fate of the patent is involved. *Rubber Company v. Goodyear*, 243.
3. On a suit at law, involving a question of priority of invention, where a patent under consideration is attempted to be invalidated by a prior patent, counsel cannot require the court to compare the two specifications, and to instruct the jury, as matter of law, whether the inventions therein described are or are not identical. *Bischoff v. Wethered*, 255.
4. It is undoubtedly the common practice of the United States Circuit Courts, in actions at law, on questions of priority of invention, where a patent under consideration is attempted to be invalidated by a prior patent, to take the evidence of experts as to the nature of the various mechanisms or manufactures described in the different patents produced, and as to the identity or diversity between them, and to submit all the evidence to the jury, under general instructions as to the rules by which they are to consider the evidence. A case may sometimes be so clear that the court may feel no need of an expert to explain the terms of art or the descriptions contained in the respective patents, and may, therefore, feel authorized to leave the question of identity to the jury, under such general instructions as the nature of the documents seem to require. And in such plain cases the court would probably feel authorized to set aside a verdict unsatisfactory to itself, as against the weight of evidence. But in all such cases the question would still be treated as a question of fact for the jury, and not as a question of law for the court. *Ibid.*, 257.
5. Under this rule of practice counsel would not have the right to require the court, as matter of law, to pronounce upon the identity or diversity of the several inventions described in the patents produced. *Ibid.*, 258.
6. It is true that it is the province of the court, and not the jury, to construe the meaning of documentary evidence. But the specifications of patents for inventions are documents of a peculiar kind. They profess to describe mechanisms and complicated machinery, chemical compositions, and other manufactured products, which have their existence *in pais*, outside of the documents themselves, and which are commonly described by terms of the art or mystery to which they respectively belong; and these descriptions and terms of art often require peculiar knowledge and education to understand them aright, and slight verbal variations, scarcely noticeable to a common reader, would be detected by an expert in the art, as indicating an important variation in the invention. Indeed the whole subject-matter of a patent is an embodied conception outside of the patent itself, which, to the mind of those expert in the art, stands out in clear and distinct relief, whilst it is often unperceived, or but dimly perceived, by the uninitiated. This outward embodiment of the terms contained in the patent is the thing invented, and is to be properly sought, like the explanation of all latent ambiguities arising from the description of external things, by evidence *in pais*. *Ibid.*, 258.
7. The question—whether the court is bound to compare the two specifications, and to instruct the jury, as matter of law, whether the inventions therein described are or are not identical, has recently undergone considerable discussion in England. It was at first decided in the cases of *Bovill v. Pimm*, 38 English Law and Equity, 441; *Betts v. Menzies*; 1 Ellis & Ellis, Q. B. 999, and *Bush v. Fox*,

CONSTRUCTION OF PATENT—*continued.*

- 38 English Law and Equity, 1, that it was the province and duty of the court to compare the documents and decide on the identity or diversity of the inventions. But in 1862, Lord Westbury, in two very elaborate judgments, one of which was delivered in the House of Lords on occasion of overruling the decision in *Betts v. Menzies*, held that it belonged to the province of evidence and not that of construction to determine this question. *Ibid.*
8. Two documents using the same words, if of different dates, may intend very diverse things, as was decided in the case of *The Bridge Proprietors v. The Hoboken Company*, 1 Wallace, 116. *Ibid.*, 259.
9. Letters patent are not to be regarded as monopolies, created by the executive authority at the expense and to the prejudice of all the community except the persons therein named as patentees, but as public franchises granted to the inventors of new and useful improvements, for the purpose of securing to them, as such inventors, for a limited term therein mentioned, the exclusive right and liberty to make and use and vend to others to be used their own inventions, as tending to promote the progress of science and the useful arts, and as a matter of compensation to the inventors for their labor, toil, and expense in making the inventions, and reducing the same to practice for the public benefit, as contemplated by the constitution and sanctioned by the laws of congress. *Seymour v. Osborne*, 305.
10. Construction of Dubois's patent of September 23, 1862, "for building piers for bridges, and setting the same:" *Held*, to be for a device or instrument used in a process, and not for the process itself. *Railroad Co. v. Dubois*, 329.
11. Doubtful expressions may be subject to construction; but where the language employed is clear and unambiguous, it must speak its own construction in the specification of a patent as well as in any other grant issued by public authority. Intention in every case, it may be admitted, is the primary rule of construction; but language invoked to support a particular theory must be such as is fit, when it is compared with the whole instrument, to express the imputed intention, else the theory in question cannot be supported, as courts of justice cannot legislate nor can they add to a grant or contract any stipulation or condition which it does not contain. *Mitchell v. Tilghman*, 568.
12. In construing a patent courts should proceed in a liberal spirit, so as to sustain the patent and the construction claimed by the patentee, if it can be done consistently with the language which he has employed; and this applies to a reissue as much as to an original patent. *Klein v. Russell*, 588.
13. Hence when there has been a reissue on an original patent, and the meaning of the specification and claim in the reissue is not perfectly clear, they may be read by the light of the specification and claim of the original patent, and if they can be sustained consistently with the language there used, be sustained by them. *Ibid.*

See SPECIFICATION.

CONSTRUCTION OF STATUTE.

1. The patent acts should be liberally construed to meet the wise and beneficent object of the legislature. Patentees are a meritorious class, and all the aid and protection which the law allows, this court will cheerfully give them. *Commissioner of Patents v. Whiteley*, 152.
2. In construing the sixth and fifteenth sections of the act of 1836, the whole act is to be taken together and construed in the light of the context. The meaning of these sections must be sought in the import of their language, and in the object and policy of the legislature in enacting them. *Coffin v. Ogden*, 468.

CONTINUITY OF APPLICATION.

See ABANDONMENT OF INVENTION; APPLICATION, 1, 2.

CONTRACT.

See AGREEMENT; ASSIGNMENT; DEED; LICENSE.

COPYRIGHT.

1. Where, in consideration of an agreement by publishers to pay him a certain sum of money, and the performance of specified duties in connection with the publication, a reporter of judicial decisions agreed, in 1828, "to furnish in manuscript the reports of his court for publication," with an additional clause that the "publishers shall have the copyright of said reports, to them and their assigns forever;" *Held*, on bill filed by reporter's executrix for injunction, and account of profits after the expiration of twenty-eight years from the entry of copyright, (A. D. 1830,) that the publishers had a full right of property in the manuscript; and accordingly that they could publish not only for the twenty-eight years, during which the act of May 31, 1790, (the only copyright act in force when the agreement was made,) gave an author and his *assigns* the exclusive right to print, reprint, publish, and vend, but also during the fourteen years granted by an act of 3d February, 1831, subsequently passed, by which the exclusive right was continued to the author, if alive, or if dead, to his *widow, child, or children*. The reporter not having died till 1868. *Paige v. Banks*, 376.
2. *Held*, further, that this view was confirmed by the fact that a notice had been given in 1858, by the reporter to his publishers, that he himself claimed the right to publish on the expiration of the first twenty-eight years, and forbid them to publish further; and that they, in reply, denied his right, and asserted their own, and that though the reporter lived, as already said, till 1868, ten years after this correspondence, no further notice was taken of this subject, and no attempt by the reporter, by act or protest, to interfere with the exercise of the right of the publishers to publish and sell. *Ibid.*
3. Independent of any statutory provision, the right of an author in and to his unpublished manuscripts is full and complete. It is his property, and like any other property, is subject to his disposal. He may assign a qualified interest in it or make an absolute conveyance of the whole interest. *Ibid.*, 380.

COUNSEL FEES.

See DAMAGES, 5.

COURT.

See CONSTRUCTION OF PATENT, 3, 4, 5, 6, 7, 11, 12; JURY, 1; REISSUE, 17.

COURT OF CLAIMS.

The Court of Claims, in deciding upon the rights of claimants, is not bound by any special rules of pleading. *United States v. Burns*, 345.

See AGREEMENT, 9, 10.

CROSS BILL.

See EQUITY, 10.

DAMAGES.

1. In cases where there is no established patent or license fee, general evidence may be resorted to in order to get at the measure of damages; and evidence of the utility and advantage of the invention over the old modes or devices that had been used for working out similar results is competent and appropriate. *Suffolk Co. v. Hayden*, 140.
2. The jury, in ascertaining the damages, upon this sort of evidence, is not to estimate them for the whole term of the patent, but only for the period of the infringement. And a recovery does not vest the infringer with the right to continue the use. *Ibid.*, 141.
3. The assignment of a patent does not carry with it a transfer of the right to damages for an infringement committed before such assignment. *Moore v. Marsh*, 186

DAMAGES—*continued.*

4. A patentee claiming under a reissued patent cannot recover damages for infringement committed antecedently to the date of his reissue. *Agawam Co. v. Jordan*, 187.
5. In a suit by a patentee, for damages against an infringer, the plaintiff can recover only for actual damages, and he must show the damages by evidence. They cannot be left to conjecture by the jury. Where he has sought his profit in the form of a royalty paid by his licensees, and there are no peculiar circumstances, the amount to be recovered will be regulated by that standard. Counsel fees cannot be included in the verdict; and an instruction which directed the jury to award to the plaintiff "such sum as they should find to be required to remunerate him for the loss sustained by the wrongful act of the defendants, and to reimburse him for all such expenditures as have been necessarily incurred by him in order to establish his right," was held to be erroneous as too broad, and vague, and as tending to lead the jury to suppose that it was their duty to allow counsel fees, and perhaps other charges and expenditures equally inadmissible. *Philp v. Nock*, 454.
6. The rule of damages in actions at law for infringement of the rights of patentees has long been established in this court to be the customary price at which the patentee has licensed the use of his invention, where a sufficient number of licensees or sales have been made to establish a market value. *Packet Company v. Sickles*, 616.
7. The reason for this rule is still stronger when the use of the patented invention has been with the consent of the patentee, express or implied, without any rate of compensation fixed by the parties. *Ibid.*
8. The rule declared in *Seymour v. McCormick* has remained the established criterion of damages in cases to which it was applicable ever since. *Ibid.*, 621.
9. The cases of the *Suffolk Company v. Hayden* and *Seymour v. McCormick* cited and commented on. *Ibid.*
10. The rule in suits in equity of ascertaining by reference to a master the profits which the defendant has made by the use of the plaintiff's invention, stands on a different principle. It is that of converting the infringer into a trustee for the patentee as regards the profits thus made; and the adjustment of these profits is subject to all the equitable considerations which are necessary to do complete justice between the parties, many of which would be inappropriate in a trial by jury. With these corrective powers in the hands of the chancellor, the rule of assuming profits as the groundwork for estimating the compensation due from the infringer to the patentee has produced results calculated to suggest distrust of its universal application even in courts of equity. *Ibid.*

See ACCOUNT OF PROFITS; ACTIONS; EQUITY, 9, 10: INFRINGEMENT, 1.

DECLARATION.

1. A declaration in covenant by a patentee, setting out a sealed contract by defendant to pay him a certain tariff in consideration of an exclusive right to use the patent within a certain district, is good. *Heckers v. Fowler*, 113.

See EVIDENCE, 4.

DECREE.

See ACCOUNT, 1, 4, 12; EQUITY, 9, 13.

DEDICATION.

See ABANDONMENT OF INVENTION.

DEED.

A deed by which a party conveys "all his property and estate, whatsoever and wheresoever, of every kind and description," carries patent rights and extensions, if the party own any. *Railroad Company v. Trimble*, 274.

See ASSIGNMENT.

DEFENSES.

See **AGREEMENT**, 1; **EQUITY**, 6, 7, 8; **ESTOPPEL**; **INFRINGEMENT**; **NOTICE OF SPECIAL MATTER**.

DESCRIPTION.

See **SPECIFICATION**.

DESIGN.

1. A claim for arranging an elastic bed for printing designs is not a claim for a design under the eleventh section of the act of March 2, 1861, entitled "An act in addition to an act to promote the progress of the useful arts;" but is a claim for a device. *Clark v. Bousfield*, 287.
2. The acts of Congress which authorize the grant of a patent for designs contemplate not so much utility as appearance; and the thing invented or produced for which a patent is given is that which gives a peculiar or distinctive appearance to the manufacture or article to which it is applied. *Gorham Company v. White*, 392.
3. It is the appearance to the eye that constitutes mainly, if not entirely, the contribution to the public which the law deems worthy of recompense, and identity of appearance, or sameness of effect upon the eye, is the main test of substantial identity of design. *Ibid.*
4. It is not essential to identity of design that the appearance should be the same to the eye of an expert. If in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, and sufficient to induce him to purchase one, supposing it to be the other, the one first patented is infringed by the other. *Ibid.*, 393.
5. As the acts of Congress embrace only designs applied, or to be applied, they must refer to finished products of invention rather than to the process of finishing them, or to the agencies by which they are developed. A patent for a product is a distinct thing from a patent for the elements entering into it, or for the ingredients of which it is composed, or for the combination that causes it. The controlling consideration is the resultant effect. *McCrea v. Holdsworth* and *Holdsworth v. McCrea* applied. *Ibid.*, 405, 406.

DIVISION OF APPLICATION.

See **APPLICATION**, 7, 8.

DOUBLE USE.

It is no ground for rejecting the prior patent that it does not profess to do the same things that the second patent does. If what it performs is essentially the same, and its structure and action suggest to the mind of an ordinarily skillful mechanic its adaptation to the same use as the second patent, by the same means, this adaptation is not a new invention, and is not patentable. *Tucker v. Spalding*, 366.

See **COMBINATION**, 8; **EQUIVALENT**.

EMPLOYER AND EMPLOYEE.

See **NOVELTY**, 1; **SUGGESTIONS**.

EQUITY.

1. Where parties in their answer, as originally filed to a bill for infringing a patent, admit that they did manufacture and sell the articles alleged to have been patented, the fact thus admitted in the answer must be accepted as established. As, however, the admission need go no further than its terms *necessarily* imply, the court will, under special circumstances, and where this is promotive of justice, assume that the smallest number of articles were made consistent with the use of the word involved in the plural, and with the use by the defendants of any part of the patent which is valid. *Jones v. Morehead*, 28.

EQUITY—*continued.*

- . 2. It would be subversive of all sound practice, and tend largely to defeat the ends of justice, if the court should refuse to accept a fact as settled which is distinctly alleged in the bill and admitted in the answer. *Ibid.*, 34.
3. A decree in chancery, awarding to a patentee a permanent injunction, and for an account of gains and profits, and that the cause be referred to a master to take and state the amount, and to report to the court, is not a final decree within the meaning of the act of Congress allowing an appeal on a final decree to this court. *Humiston v. Stainthorp*, 110.
4. Though a decree have been entered "as" of a prior date—the date of an order settling apparently the terms of a decree to be entered thereafter—the rights of the parties in respect to an appeal are determined by the date of the actual entry, or of the signing and filing of the final decree. *Rubber Company v. Goodyear*, 170.
5. In a suit in chancery under a patent, evidence of prior knowledge or use of the thing patented is not admissible, unless the answer contains the names and places of residence of those alleged to have possessed a prior knowledge of the thing, and where the same had been used. *Agawam Co. v. Jordan*, 187.
6. The defense, "that the patentee fraudulently and surreptitiously obtained the patent for that which he knew was invented by another," is not a sufficient defense to a charge of infringement, unless accompanied by the further allegation, that the alleged first inventor was at the time using reasonable diligence in adapting and perfecting the invention. *Ibid.*
7. On a bill in chancery, for an infringement of a patent, the allegation in an answer, of sale and public use "prior to the filing of an application for a patent," with the consent and allowance of the inventor, is insufficient, unless it is also alleged in the answer that such sale or use was more than two years before he applied for a patent. *Ibid.*
8. The proposition that a patent is fatally defective, because it is impossible to make merchantable goods according to the directions contained in the specification, cannot be entertained, when the answer contains no averment upon the subject. No such issue was tendered to the complainants, and they have had no notice that such a defense was intended to be relied upon. In equity the proofs and allegations must correspond. The examination of the case by the court is confined to the issues made by the pleadings. Proofs without the requisite allegations are as unavailing as such allegations would be without the proofs requisite to support them. *Rubber Company v. Goodyear*, 240.
9. The severity of the decree may be increased or mitigated according to the complexion of the conduct of the offender. *Ibid.*, 249.
10. Where, on a bill by several persons for the infringement of a patent and for an account, (the defenses being invalidity of the patent and a license,) the court sustain the patent and decree damages, a bill cannot be regarded as a cross-bill which sets up a judgment in another suit against one of the complainants, and asks that the conjoined defendants in the principal suit set forth and discover what share of the damages they claim *respectively*, so that the defendant in that suit may set off the judgment as respects the one against whom it is. *Ibid.*, 252.
11. As an original bill it cannot be sustained, if it have either been filed before the decree for damages was rendered in the principal suit, or have been a judgment in *attachment* only, and where there was no service on the person of the defendant. *Ibid.*
12. A bill which is in nowise auxiliary to an original suit, nor in continuation of that proceeding, does not present a case proper for substituted service. *Ibid.*
13. A decree in equity in one of the loyal States against a party who, having been engaged in rebellion, was at the time a prisoner of war of the United States, outside of the State, and against whom there was no service of process, or any

EQUITY—continued.

step taken to bring him before the court, is void; and any sale under it is also void. *Railroad Company v. Trimble*, 274.

14. The settled practice in equity is to require a respondent to give notice in his answer of the names and residence of those persons whom he intends to prove to have possessed a prior knowledge of the invention, and where the same had been used. *Seymour v. Osborne*, 291.

See ACCOUNT OF PROFITS; BILL OF REVIEW; REISSUE, 17; REPEAL OF PATENT.

EQUIVALENT.

1. The abstract phrases "substantial identity," "equivalent," "mode of operation," &c., are often used in such a vague and equivocal manner that they mystify and lead to absurd conclusions those who will not distinguish between things that differ. That two machines produce the same effect will not justify the assertion that they are substantially the same, or that the devices used by one are, therefore, mere equivalents for those of the other. *Burr v. Duryee*, 102.
2. To assume that every combination of devices in a machine which is used to produce the same effect is necessarily an equivalent for any other combination used for the same purpose is a flagrant abuse of the term "equivalent." Without attempting to define this abstract term by other abstract terms, we may give examples which will best show its application to machines, as where a simple lever is used in one, and the other substitutes a cam or toggle-joint, or wedge for a cam, and many other cases where one mechanical power is substituted for another in a machine. *Ibid.*, 103.
3. The doctrine of equivalents as applied to chemical inventions explained, and the distinction between mechanical inventions and chemical discoveries, where experiment is required to ascertain the effect of chemical substances, pointed out. *Tyler v. Boston*, 177.
4. The term "equivalent," when speaking of machines, has a certain definite meaning; but when used with regard to the chemical action of such fluids as can be discovered only by experiment, it only means *equally good*. *Ibid.*, 180.
5. The extent to which either the inventor of a device or of an entire machine, or of a mere combination, can invoke the aid of the doctrine of equivalents, is the same, except that combination is not infringed unless by a machine containing all the material ingredients patented, or proper substitutes for one or more of such ingredients, *well known* to be such at the time when the patent was granted. *Seymour v. Osborne*, 292.
6. The use of one post and a supporting frame attached thereto, in a reaping machine, is an obvious equivalent for the two posts specifically mentioned in the patent of Palmer and Williams. *Ibid.*
7. *Bona fide* inventors of a combination are as much entitled to equivalents as the inventors of other patentable improvements, by which is meant that a patentee in such a case may substitute another ingredient for any one of the ingredients of his invention, if the ingredient substituted performs the same function as the one omitted, and was well known at the date of the patent as a proper substitute for the one omitted in the patented combination. *Gould v. Rees*, 442.

See COMBINATION; DOUBLE USE.

ESTOPPEL.

1. It is no bar to an action for an infringement of a patent, that before making his application to the Patent Office, the patentee had explained his invention orally to several persons, without making a drawing, model, or written specification thereof, and that subsequently, though prior to his application for a patent, the defendant had devised and perfected the same thing, and described it in the presence of the patentee, without his making claim to it. *Railroad Co. v. Dubois*, 332.
2. Silence of a party works no estoppel, unless it has misled another party to his hurt. *Ibid.*

EVIDENCE.

1. The rules of evidence prescribed by the laws of a State are rules of decision for the United States courts while sitting within the limits of such State, within the meaning and subject to the exceptions contained in the 34th section of the judiciary act. *Vance v. Campbell*, 10.
2. The statutory enactments of the States of the Union, in respect to evidence in cases at common law, are obligatory upon judges of the courts of the United States, who are bound to apply them as rules of decision. *Wright v. Bates*, 17.
3. How far parol proof may be introduced to show verbal agreements of the parties at the time when deeds were executed, and so to prove mistake or fraud in not executing what it was understood should be executed;—the question raised on argument, but not decided by the court. *Bloomer v. Millinger*, 42.
4. A declaration that a certain improvement, containing in reality one principal and three distinct minor improvements, was patented on a day named, is supported by evidence that four patents—reissues—were subsequently granted on an original patent of the date named; such original having, in its specification, described all and no more than the improvements specified in the four reissues. The reissues relate back. *Read v. Bowman*, 129.
5. Letters patent of long standing will not be declared invalid upon testimony largely impeached; as *ex. gr.*, where forty persons swear that the character of the witness for truth and veracity is bad; although very numerous witnesses on the other hand swear that they never heard his reputation in that way questioned. *Agam Co. v. Jordan*, 187.
6. On the trial of the cause the plaintiffs, to sustain the issue on their part, introduced in evidence the reissued patent on which the suit was founded, together with the original patent and the certificate of renewal and extension; and having proved the assignment and introduced evidence tending to prove that the defendants had infringed the reissued patent, as alleged in the declaration, rested their case. They might well rest in that state of the case, as the letters patent afforded *prima facie* evidence that the patentee under whom they claimed was the original and first inventor of what is therein described as his improvement, and having introduced evidence tending to show infringement and damage, they were entitled to a verdict, unless some evidence was introduced by the defendants to rebut the evidence given to prove infringement, or to establish some valid defense to the cause of action set forth in the declaration. *Blanchard v. Putnam*, 227.
7. Where the defendant proposes to maintain, at the final hearing of a case in chancery, that his machine does not infringe the complainant's patent, proof of non-infringement should appear in the testimony. *Bennet v. Fowler*, 232.
8. The grant of letters patent by the Commissioner of Patents, when lawfully exercised, is *prima facie* evidence that the patentee is the first inventor of that which is described and claimed in them. *Seymour v. Osborne*, 291.
9. Persons seeking redress for the unlawful use of letters patent in which they have an interest are obliged to allege and prove that they, or those under whom they claim, are the original and first inventors of the improvement embodied in the letters patent on which the suit is founded, and that the same have been infringed by the party against whom the suit is brought. *Ibid.*, 309.
10. Undoubtedly the burden to establish both of those allegations is, in the first place, upon the party instituting the suit, as they lie at the foundation of every such claim; but the law is well settled that the letters patent in question, where they are introduced in evidence in support of the claim, if they are in due form, afford a *prima facie* presumption that the first named allegation is true, and the rule is equally well settled that that presumption, in the absence of satisfactory proof to the contrary, is sufficient to entitle the party instituting the suit to

EVIDENCE—continued.

- recover for the alleged violation of the exclusive rights secured to him in the letters patent. *Ibid.*
11. The effect of the letters patent as evidence is to cast the burden of proof upon the respondents to show that the respective patentees are not the original inventors of the improvements embodied in the letters patent. *Ibid.*
 12. Recitals in letters patent in the absence of fraud are conclusive evidence that the necessary oaths were taken before the patent was granted. *Ibid.*, 291.
 13. The novelty of a patented invention cannot be assailed by any other evidence than that of which the plaintiff has received notice. Hence the state of the art, at the time of the alleged invention, though proper to be considered by the court in construing the patent, in the absence of notice, has no legitimate bearing upon the question whether the patentee was the first inventor. *Railroad Co. v. Dubois*, 330.
 14. In an action at law, where a patent of prior date is offered in evidence as covering the invention described in the plaintiff's patent, on a charge of infringement, the question of the identity of the two instruments or machines must be left to the jury, if there is so much resemblance as raises the question at all. *Tucker v. Spalding*, 366.
 15. And though the principles by which the question must be decided may be very largely propositions of law, it still remains the essential nature of the jury trial that while the court may on this mixed question of law and fact lay down to the jury the law which should govern them, so as to guide them to truth, and guard them against error, and may, if they disregard instructions, set aside their verdict, the ultimate response to the question must come from the jury. *Ibid.*, 367.
 16. This subject was fully considered in the case of *Bischoff v. Wethered*. *Ibid.*, 368.
 17. Where, on a question of novelty in a patented process, a witness has stated, that after the patent, he was using a particular process which he had been using for twenty years before, (a process which the defendant affirmed to be the same as the one patented,) it is allowable to ask the witness whether the patentee had not forbid him to use what he was then using; the purpose of the question being to show that the patentee had forbid him; and that the witness then disclaimed using the patented process, and said that he had "a way of his own" which he was using. *Klein v. Russell*, 588.
 18. It is allowable to ask a witness of the opposite side, who has referred to and said that he had seen and copied a paper in reference to the expenses of the suit, subscribed by various persons, what were the contents of the paper; the purpose of the question being to show by the answer that the defendants or witnesses were in a combination to defeat the plaintiff and to share the expenses of the opposition. It was not necessary prior to the question to call on any one to produce the original paper. *Ibid.*
 19. When a patent is on trial and the question in issue involves the matter of novelty, utility, and *modus operandi*, it is proper enough to ask what the effect of the patented invention has been. *Ibid.*

See BILL OF EXCEPTIONS; CONSTRUCTION OF PATENT, 4, 5, 6; DAMAGES, 1, 5; EQUITY, 5; NOTICE OF SPECIAL MATTER; REISSUE, 16, 17, 18; UTILITY, 2.

EXAMINATION.

See APPLICATION; REISSUE, 5.

EXAMINERS OF PATENT OFFICE.

See APPLICATION, 3; REISSUE, 5.

EXECUTORS.

See ADMINISTRATORS.

EXPERIMENTS.

Whoever first perfects a machine is entitled to the patent, and is the real inventor, although others may have previously had the idea and made some experiments toward putting it in practice. *Agawam Co. v. Jordan*, 201.

See ABANDONMENT; COMPOSITION OF MATTER; REDUCTION TO PRACTICE.

EXPERTS.

See CONSTRUCTION OF PATENT, 4, 5, 6; REISSUE, 17.

EXTENSION.

1. Where a patent is extended by virtue of a special act of Congress, it is not necessary to recite in the certificate of extension all the provisos contained in the act. *Agawam Co. v. Jordan*, 187.
2. Extended letters patent cannot be abrogated in any collateral proceeding for fraud. *Rubber Co. v. Goodyear*, 237.
3. The function of the Commissioner of Patents is judicial in its character. No provision is made for appeal or review. His decision must be held conclusive until the patent is impeached in a proceeding had directly for that purpose. *Ibid.*, 245.
4. A proceeding to vacate the extension of a patent, of which the extension has expired before the proceeding was begun, has no equity to support it, and cannot be sustained on demurrer. *Bourne v. Goodyear*, 255.
5. Provision is made by the eighteenth section of the act of the 4th of July, 1836, for the extension of patents beyond the time of their limitation. By the latter clause of that section the benefit of such renewal is expressly extended to assignees and grantees of the right to use the thing patented, to the extent of their respective interests therein. (5 Stat. at Large, 125.) Under that provision it has repeatedly been held by this court that a party who had purchased and was using a patented machine, during the original term for which the patent was granted, had a right to continue to use the same during the extension. *Bloomer v. Millinger*, 50.

See ASSIGNMENT.

FICTITIOUS LITIGATION.

See APPEAL.

FIRST INVENTOR.

See ABANDONMENT; NOVELTY; PARTICULAR PATENTS; REDUCTION TO PRACTICE.

FOREIGN JUDGMENT.

A judgment recovered in the Common Pleas, at Westminster, England, against a person in the United States, without any service of process on him, or any notice of the suit other than a personal one served on him in this country, has no validity here, even of a *prima facie* character. *Bischoff v. Welthered*, 255.

FRAUD.

1. On a suit for damages by a patentee against a British corporation and its "managing agent," sent to this country, in having been fraudulently pretending in a series of negotiations to conclude an agreement with him, the patentee, to make use of his patent—the alleged real purpose having been through drafts of agreements and protracted consultations to keep the patentee from using his invention during a certain season, and so to get time to use another invention in which they were themselves largely interested—it is error to charge that if the corporation never gave any authority to the managing agent to assent to the draft of agreement in their behalf and in their name, and never sanctioned it as a corporate act, suit for such a fraud as above indicated could not be maintained.

FRAUD—continued.

The suit not being on any contract, the corporation might be, notwithstanding, responsible for the fraud. *Butler v. Watkins*, 368.

2. In actions for fraud, large latitude is given to the admission of evidence. If a motive exist prompting to a particular line of conduct, and it be shown that in pursuing that line a defendant has deceived and defrauded one person, it may be inferred that similar conduct towards another, at about the same time and in relation to a like subject, was actuated by the same spirit. On such a suit as above mentioned evidence was therefore held admissible that in the same spring or early summer the defendant had similar negotiations with a wholly different person respecting a patented invention of his like the plaintiff's, and acted deceitfully towards him in order to keep his invention out of the market in that year. *Ibid.*, 369.

See **INFRINGEMENT**, 7; **REISSUE**, 21; **REPEAL OF PATENT**.

GRANTEES.

Both assignees and grantees have an interest in the patent, but the terms are not synonymous, as used in the patent law. Grants, as well as assignments, must be in writing, and they must convey the exclusive right, under the patent, to make and use, and vend to others to be used, the thing patented, within and throughout some specified district or portion of the United States, and such right must be exclusive of the patentee, as well as others except the grantee. *Moore v. Marsh*, 185.

See **ACTION**; **ASSIGNMENT**.

IDENTITY.

1. Two things are not the same under the patent law when one is in practice substantially better than the other in a case where the second improvement is not gained by the use of the same means or known mechanical equivalents. *Mitchell v. Tilghman*, 586.
2. Patent laws have for their leading purpose the encouragement of useful inventions. Practical utility is their object, and it would be strange if, with such object in view, the law should consider two things substantially the same which practically and in reference to their utility are substantially different. *Ibid.*
3. Slight differences in degree cannot be regarded as of weight in determining the question of substantial similarity or substantial difference, but in all cases the question whether the difference in degree is sufficient or insufficient to prove the alleged infringement is a question of fact to be determined by the jury in an action at law, or by the court in a suit in equity. *Ibid.*

See **DESIGN**; **EQUIVALENT**; **EVIDENCE**, 14; **INFRINGEMENT**.

IMPROVEMENT.

1. No inference can be drawn from the statute that an inventor who has made an improvement in a machine, and thus effects the desired result in a better or cheaper manner than before, can include all previous inventions, and have a claim to the whole art, discovery, or machine which he has improved. All others have an equal right to make improved machines, provided they do not embody the same, or substantially the same devices, or combination of devices, which constitute the peculiar characteristic of the previous invention. *Burr v. Duryee*, 101.
2. Every man has a right to make an improvement in a machine, and evade a previous patent, provided he does not invade the rights of the patentee. *Ibid.*, 103.
3. Particular changes may be made in the construction and operation of an old machine, so as to adapt it to a new and valuable use not known before, and to which the old machine had not been, and could not be, applied without those changes: under those circumstances, if the machine, as changed and modified

IMPROVEMENT—*continued.*

produces a new and useful result, it may be patented, and the patent will be upheld under existing laws. *Seymour v. Osborne*, 292.

See COMBINATION; EQUIVALENT; SPECIFICATION, 4.

INFRINGEMENT.

1. A part of an invention not being original, no action lies by the inventor or his assignees for using it in combination with other inventions not patented by that person; nor can persons so using it be made infringers by an argument which, assuming the validity of the invention, mingle it with these other parts, and then treats the whole as a unit, and gives to him or his assignees damages equivalent to the net profits on the manufacture of the entire lock. *Jones v. Morehead*, 26.
2. *Semble*, That the only proper comparison on a question of infringement, is of the defendant's machine with that of the plaintiff, as described in the pleadings; and that it is no answer to the cause of action to plead or prove that the defendant is the licensee of the owner of another patent, and that his machine is constructed in accordance with that patent. *Blanchard v. Putnam*, 223.
3. An infringement involves substantial identity, whether that identity be described by the terms "same principle," same "*modus operandi*," or any other. *Burr v. Duryee*, 102.
4. A question of infringement is best determined by the court, by a comparison of a defendant's machines with mechanism described in patent and of their modes of operation. *Seymour v. Osborne*, 292.
5. Controversies respecting the infringement of letters patent possess, in many cases, a degree of importance much beyond the profits or damages claimed for the alleged unlawful use of the invention, as the pleadings usually put in issue, in one form or another, the validity of the letters patent alleged to be infringed, and frequently involve, directly or indirectly, the same inquiry in regard to the letters patent set up in defense as superseding the patent on which the suit is founded. Such being the state of the pleadings, the result, whatever it may be, whether for the party suing or for the party defending, must oftentimes determine rights of property of much greater value than the amount of the profits or damages claimed for the alleged infringement of the letters patent. *Ibid.*, 304.
6. Inventions secured by letters patent are property in the holder of the patent, and as such are as much entitled to protection as any other property, consisting of a franchise during the term for which the franchise or the exclusive right is granted. *Ibid.*, 305.
7. Defendants when sued for an infringement are not at liberty to set up as a defense that the patent had been fraudulently obtained, no fraud appearing upon its face. *Railroad Company v. Dubois*, 343.
8. The introduction of a newly-discovered element or ingredient, or one not theretofore known to be an equivalent, would not constitute an infringement. *Gould v. Rees*, 437.
9. Mere formal alterations of a combination in letters patent do not constitute any defense to the charge of infringement, as the inventor of a combination is as much entitled to suppress every other combination of the same ingredients to produce the same result, not substantially different from what he has invented, as the inventor of any other patented improvement. *Ibid.*, 441.
10. Where a defendant had used highly heated water in a close vessel, but used a much more moderate degree of heat than specified by Tilghman, and used an entirely different apparatus from Tilghman's, and one which permitted the existence of steam as well as water—construing Tilghman's claim of invention as limited by the specific means and mode of operation described in his specification.

INFRINGEMENT—*continued.*

tion—such defendant was held not to have infringed. *Mitchell v. Tilghman*, 476.

See ACCOUNT OF PROFITS; ACTIONS; COMBINATION, 1, 2; DAMAGES, 2; DESIGN, 4; EQUIVALENT, 5; IDENTITY; PARTICULAR PATENT; SPECIFICATION, 22.

INTERFERING PATENTS.

1. In the English courts, in the case of a conflict under two patents granting the same right, the *scire facias* may be brought in the name of one of the patentees; but in the other cases, when the patent was obtained by fraud upon the king, by false suggestion, or where it was issued without authority, and for the good of the public, and right and justice it should be repealed, the writ is to issue in the king's name or his attorney general's. *Mowry v. Whitney*, 387.
2. The 16th section of the Patent Act of 1836 seems to have in view the same distinction made by the common law in regard to annulling patents, for which it authorizes individuals claiming under conflicting patents, or one whose claim to a patent has been rejected because his invention was covered by a patent already issued, to try the conflicting claim in chancery, and authorizes the court to annul or set aside a patent so far as may be found necessary to protect the right, the suit by individuals is limited to that class of cases; and it is provided that the decree should be of no validity except between the parties to the suit. The general public is left to the protection of the government and its officers. *Ibid.*

INVENTION.

See ABDOMINATION; DOUBLE USE; COMBINATION; NOVELTY; PRIOR USE; REDUCTION TO PRACTICE; SUBSTITUTION OF MATERIAL; SUGGESTIONS; UTILITY; PRIOR USE.

JURY.

1. Where a plaintiff having a patent for an improved machine, his "improvement" consisting in certain pieces of mechanism *described*, having peculiar characteristics *described*; the pieces of mechanism being combined by means *described*, so as to produce a particular result *described*, an admission by him that pieces of mechanism in their general nature like his, and used for "various purposes," were older than his invention, is not an admission that these machines were the same as his; and the fact whether they were or were not is a question for the jury, and not for the court. *Turrill v. Railroad Company*, 51.
2. The secret deliberations of the jury or grounds of their proceedings, while engaged in making up their verdict, are not competent or admissible evidence of the issues or finding; this evidence should be confined to the points in controversy on the former trial, to the testimony given by the parties, and to the questions submitted to the jury for their consideration; and then the record furnishes the only proper proof of the verdict. *Packet Company v. Sickles*, 155.
3. When the extrinsic proof of the identity of the cause of action is such that the court must submit the question to the jury as a matter of fact, any other matters in defense or support of the action, as the case may be, should be admitted on the trial, under proper instructions. *Ibid.*, 156.
4. Whether one compound of given proportions is substantially the same as another compound, varying the proportions, is a question for the jury. *Tyler v. Boston*, 177.

See APPLICATION, 2; CONSTRUCTION OF PATENT, 3, 4, 5, 6; EVIDENCE.

LAW OF NATURE.

See PRINCIPLE, 1, 2.

LICENSE.

A license to use an invention by a person only at "his own establishment" does not authorize a use at an establishment owned by himself and others. *Rubber Company v. Goodyear*, 237.

See **ASSIGNMENT**.

MACHINE.

See **ASSIGNMENT**; **PRINCIPLE**, 1, 2.

MANDAMUS.

1. The principles of law relating to the remedy by *mandamus* are well settled. It lies where there is a refusal to perform a ministerial act involving no exercise of judgment or discretion. It lies also where the exercise of judgment and discretion are involved and the officer refuses to decide, provided that if he decided, the aggrieved party could have his decision reviewed by another tribunal. *Decatur v. Paulding* affirmed and applied. It is applicable only to these two classes of cases, and cannot be made to perform the function of a writ of error. *Commissioner of Patents v. Whiteley*, 154.
2. If an applicant has done all in his power to make his application effectual, he has a right to consider it properly before the Commissioner, and a *mandamus* would lie to compel the Commissioner to receive it. *Ibid.*

MANUFACTURE.

See **PROCESS**.

MARKS.

See **ACCOUNT OF PROFITS**, 2.

MATERIAL.

See **SUBSTITUTION OF MATERIAL**.

MECHANICAL SKILL.

See **COMBINATION**, 8.

MODE.

See **PRINCIPLE**, 1, 2.

NEW APPLICATION.

See **COMBINATION**; **DOUBLE USE**.

NEW MATTER.

See **REISSUE**, 12, 13, 14, 15.

NOTICE OF SPECIAL MATTER.

1. In a suit for the infringement of a patent right, no notice is necessary to justify the admission of evidence on behalf of the defendant to show the improvements existing at the date of the plaintiff's invention in the class of articles to which it belongs. *Vance v. Campbell*, 10.
2. Persons sued as infringers may plead the general issue in suits of law, and may prove, as a defense to the charge, if they have given the defendant thirty days' notice of that defense before the trial that the patentee was not the original and first inventor of the thing patented; but the same section which authorizes such a defense provides that whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, "he shall state in his notice of special matter the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used." Evidence to prove such a defense in a suit at law is not admissible without an antecedent compliance with those conditions, and the settled practice in equity is to require the respondent, as a condition precedent to such defense, to give the complainant substantially the same information in his answer. Unless the practice were so the complainant would often be

NOTICE OF SPECIAL MATTER—*continued.*

- surprised, as the rule of law is that the letters patent afford a *prima facie* presumption that the patentee is the original and first inventor of what is therein described as his improvement, and if the respondent should not be required to give notice in the answer that proofs would be offered to overcome the presumption and establish the opposite conclusion, very great injustice might be done, as the complainant might rely upon that presumption and fail to take any countervailing proofs. *Agawam Company v. Jordan*, 196.
3. Where, in a suit at law for infringement of a patent, witnesses testify to previous invention, knowledge, or use of the thing patented, the judgment will be reversed, unless an antecedent compliance with the requirements of the 15th section of the Patent Act, requiring in the notice of special matter the names and places of residence of those whom the defendant intends to prove possessed prior knowledge, and where the same had been used, appear in the record. And this, although no reversal for this cause have been asked by counsel, but the case have been argued wholly on other grounds. *Blanchard v. Putnam*, 223.
 4. Evidence to prove previous invention, knowledge, or use of the thing patented is not admissible in any case without an antecedent compliance with the conditions specified in the 15th section of the Patent Act. Whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, "he shall state in his notice of special matter the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used," and if he does not comply with that requirement no such evidence can be received under the general issue. *Blanchard v. Putnam*, 228.
 5. Unless the rule of law was so, the plaintiff might often be surprised at the trial, as he would rely upon the presumption, which the patent affords, that he or his assignor or grantor was the original and first inventor of the improvement in question, and would not think it necessary to summon witnesses to rebut the evidence introduced by the defendant attacking the novelty of his patent. *Ibid.*, 229.
 6. Compliance with the requirements of the fifteenth section of the Patent Act being a condition precedent to the right of the defendant to introduce such evidence, under the general issue, it necessarily follows that the *onus probandi* is on him to show that the required notice was given to the plaintiff thirty days before the trial, and if he fails to do so, he cannot introduce any evidence to controvert the novelty of the patent. *Ibid.*
 7. Undoubtedly the plea of not guilty puts in issue the novelty of the invention as well as the charge of infringement, but the letters patent, when introduced by the plaintiff, afford a *prima facie* presumption that the plaintiff was the original and first inventor of the improvement; and if the defendant does not give to the plaintiff the required notice that he intends to offer evidence at the trial to overcome that presumption, he has no right to introduce any such evidence, and it necessarily follows that the court has no right to submit any such question to the jury. *Ibid.*
 8. In giving notice, under the 15th section of the Patent Act of July 4th, 1836, of the names and places of residence of those by whom he intends to prove a previous use or knowledge of the thing, and where the same has been used, the party giving notice is not bound to be so specific as to relieve the other from all inquiry or effort to investigate the facts. If he fairly puts his adversary in the way that he may ascertain all that is necessary to his defense or answer, it is all that can be required, and he is not bound by his notice to impose an unnecessary and embarrassing restriction on his own right of producing proof of what he asserts. *Wise v. Allis*, 234.
 9. Held, therefore, in a suit for infringing a patent for balancing millstones, that

NOTICE OF SPECIAL MATTER—*continued.*

when, in addition to the particular town or city in which such large objects as millstones are used, the name and residence of the witness by whom that use was to be proved was also given, there was sufficient precision and certainty in the notice. *Ibid.*

10. Notice without proof to support it is of no avail. *Seymour v. Osborne*, 317.

See EQUITY, 5; EVIDENCE, 13.

NOVELTY.

1. Parties engaging the services of an inventor, under an agreement that he shall devote his ingenuity to the perfecting of a machine for their benefit, can lay no claim to improvements conceived by him after the expiration of such agreement. *Appleton v. Bacon & North*, 19.
2. Though an idea of a person who afterwards obtains a patent for a device to give his idea effect may be a good idea, yet, if the device is not new, his patent is void, even though it be useful. The principle applied to the patent of J. B. Blair, of July 23, 1867, for a new manufacture, being rubber heads for lead pencils, and the patent held void as being for nothing more than making a hole smaller than the pencil in a piece of India rubber and putting the pencil in the hole, the elastic and erasive qualities of the India rubber being known to every one, and every one possessing capacity to make a hole in a piece of rubber, and to put a pencil in the hole, so as to be held there for an eraser by the elasticity of the rubber. *Rubber-Tip Pencil Company v. Howard*, 658.
3. The question raised by the court, but not decided, whether "the making of the case which incloses the internal works of the lock, with two faces just alike, and so well finished off in point of style that either side may be presented outwards, is a matter which could be patented, if no locks with such cases had ever been made before." *Jones v. Morehead*, 26.

See ABDOMINATION; COMBINATION; DOUBLE USE; NOTICE OF SPECIAL MATTER; PRIOR USE; REDUCTION TO PRACTICE; SUGGESTIONS; UTILITY.

OATH.

See EVIDENCE,

PARTIES.

See ACTION; ADMINISTRATORS; AGREEMENT, 4.

PARTNERSHIP.

1. Where an instrument prepared by one partner for signature by his co-partner, with whom he has fallen out and quarreled, contains mutual releases and assignments—each being the consideration of the other—it should, in order to be binding, be signed by both partners. The fact that the partner who did not prepare it has taken, without objection from the other, an unsigned counterpart, after this other partner had signed the first counterpart, and left it in the hands of a third person, to be delivered only when the unsigned counterpart was signed and delivered, does not give effect to the release. *Ambler v. Whipple*, 666.
2. Though bad character, drunkenness, and dishonesty on the part of one partner may be good grounds for dissolving a partnership, on the application of the other—this other not having known at the time of forming the partnership these characteristics of his co-partner—yet when, *before* the partnership was formed, they were known by the partner not guilty of them to have existed, they do not authorize such partner himself to treat the partnership as ended, and to take to himself all the benefits of the joint labor and joint property. A partner who furnished capital, charged in a case strongly indicating injustice, with half profits in favor of another of inventive genius, and whom, after valuable discoveries, he sought to get rid of, alleging, even with truth, intemperate habits and bad character. *Ibid.*

PARTICULAR PATENTS.

1. The claim of Sherwood, under his patent, granted in 1842, and extended in 1856, for "a new and useful improvement in door-locks," so far as the claim is for "making the cases of door-locks and latches double-faced, or so finished that either side may be used for the outside, in order that the same lock or cased fastening may answer for a right or left-hand door, substantially as described;" that is to say, the first claim in his schedule is for a thing which is not original with him, and void. *Jones v. Morehead*, 28.
2. The patent granted, September 9th, 1856, to Cawood for an "improvement in the common anvil or wedge-block, for the purpose of welding up and re-forming the ends of railroad rails when they have exfoliated or become shattered from unequal wear, occasioned by the inequalities of the road," &c., is a patent in which special devices are described as combined and arranged in a particular manner, and as operating only in a special and peculiar way for a special purpose, and to effect a special result. It is not a claim for any kind of movable press-block, combined and operating in any way with any kind of fixed block to accomplish any purpose, or effect any kind of result. *Turill v. Railroad Company*, 52.
3. The machine patented to Seth Boyden, January 10, 1860, for an improvement in machinery for forming hat-bodies, is no infringement of any of the patents granted to Henry A. Wells for the same thing. The patents to Wells, so far as they related to an improvement in the *process* of making hat-bodies, were void, William Ponsford having invented and patented the thing before him, and Wells having seen Ponsford's invention. *Burr v. Duryee*, 69.
4. The "Boyden machine" does not infringe the patent to A. B. Taylor. *Ibid* 107.
5. Jacobs was not the first inventor of the improvements patented to him in 1859 and 1860, for improvements in the construction of jails. *Jacobs v. Baker*, 174.
6. The syringe known as the Richardson syringe is an infringement of the patent for a syringe granted March 31st, 1857, to C. & H. Davidson, and reissued April 25th, 1865, with an amended specification. *Morey v. Lockwood*, 210.
7. The Davidsons were the original and first inventors of the syringe patented by the patent and reissue above referred to. *Ibid*.
8. The novelty of Charles Goodyear's patent for vulcanized rubber sustained. *Rubber Company v. Goodyear*, 237.
9. The reissued letters patent (No. 2829) for a new and improved clothes-wringer, granted to Sylvanus Walker, assignee, on the 31st day of December, 1867, construed to be for a U-shaped yoke or frame for supporting a wringing machine and for the combination of such yoke with a clamping device, when employed to hold a clothes wringer to the side of the wash-tub, and the U-form of the frame is essential to it. *Washing Machine Company v. Tool Company*, 630.
10. The use of a portable support for a wringing mechanism which has some of the features of the patentee's device, but which has not the U-formed yoke or frame, is therefore no infringement of the patent. *Ibid*, 631.
11. The inventions of William H. Seymour and Palmer and Williams, explained and defined. *Seymour v. Osborne*, 291.
12. The inventions of Nelson Platt and Alfred Churchill, patented, the former June 12, 1849, the latter March 3d, 1841, (harvesters,) contained nothing which anticipated the peculiar device secured by patent to Byron Dinsmore, February 10, 1852, for harvesting and mowing machines, assigned July 2, 1859, to Kirby and Osborne, and surrendered and reissued 28th January, 1862. *Whiteley v. Kirby*, 326.
13. Dubois's patent of September, 23d, 1862, construed and explained. *Railroad Company v. Dubois*, 329.
14. The letters patent to John Gorham, Gorham, Therber, and Lewis Dexter, Jr. dated July 16, 1861, are infringed by articles made in accordance with letters

PARTICULAR PATENTS—continued.

- patent to Le Roy S. White, dated January 15, 1867, and March 31, 1868. *Gorham Company v. White*, 392.
15. Asa Whitney's patent of April 25th, 1848, for an "improvement in the process of manufacturing cast-iron railroad wheels," was for a process, not for a combination. *Mowry v. Whitney*, 410.
16. The patent issued to Christian Reichmann, September 21, 1858, and reissued to Carlton and Merrill, August 11, 1868, construed and explained. *Carlton v. Bokee*, 456.
17. The "Comet" burner is no infringement of Reichmann's patent. *Ibid.*
18. What R. A. Tilghman, of Philadelphia, claimed as his invention under the letters patent granted to him of January 9th, 1854, was the process of manufacturing fat-acids and glycerin from fatty or oily substances by the action of water at a high temperature and pressure. *Mitchell v. Tilghman*, 476.
19. Two conditions, viz., that the heating vessel must be kept entirely full of the mixture of fat and water, and that no steam or air must be allowed to accumulate in the vessel employed to impart the heat, were material and indispensable conditions of Tilghman's patented method. *Ibid.*
20. The precise apparatus described in Tilghman's specification does not appear to have gone into practical use in this country or in Europe, and the apparatus worked by Tilghman's licensees differs in many material respects from the apparatus described in his patent; and taken as a whole, therefore, it was considered by this court that Tilghman did not succeed in introducing his invention into practical use by the means and mode of operation described in his specification. *Ibid.*

See NOVELTY, 2.

PLEADINGS.

See ADMINISTRATORS, 4; AGREEMENT, 10; BILL OF REVIEW, 2; DECLARATION; EQUITY; EVIDENCE, 4; REISSUE, 21;

PRINCIPLE.

1. As the Patent Act grants a monopoly to any one who may have discovered or invented "any new and useful art, *machine*, manufacture, or composition of matter," and as a machine is a concrete thing, consisting of parts or of certain devices and combinations of devices, a patent must be granted, in cases where the invention comes within the category of a machine, for *it*, and not for a "mode of operation," nor for a "principle," nor for an "idea," nor for any abstraction whatsoever: and this rule of law is not affected by the fact that the statute requires the patentee to *explain* "the mode of operation" of his peculiar machine which distinguishes it from all others. *Burr v. Duryee*, 69.
2. Inventions which consist in a new application of certain natural forces to produce a certain result, to which they had never before been applied, partake of the nature of discoveries, either found out by experiment or the result of a happy thought, which, when once expressed, is plain to intelligent persons, who could point out at once many devices for making it effectual. Any one can perceive the difference of such a case from the invention of a labor-saving machine, which is a mere combination of certain mechanical devices to produce a desired manufacture in a cheaper or better manner. The case of *McClurg v. Kingsland*, 1 Howard, 202, will serve to elucidate this peculiar sort of inventions. A workman in a foundry observed, in pumping water into a bucket, that the water entering at a tangent to the circle of the bucket, acquired a circular motion, diminishing when it approached the centre, where bits of straw and other lighter materials would be concentrated. In casting iron rolls, the metal required to have this rotary motion for the same purpose. This effect had previously been produced by stirring the liquid metal. The thought all at once struck the mind

PRINCIPLE—continued.

of this observer that the application of this principle or law of nature might be beneficially made to the casting of rolls by merely introducing the metal at the bottom of the mould at a tangent. The thought being once suggested, it required no skill or invention to devise a plan for the application of the principle; and yet it was a patentable invention or discovery, though it came not within the description of the statute, as "a machine, manufacture, or composition of matter." *Ibid.*, 99.

See COMBINATION, 7; SPECIFICATION, 1, 21.

PRIOR PUBLICATION.

1. A description in a prior publication, in order to defeat a patent, must contain and exhibit a substantial representation of the patented improvement in such full, clear, and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct, and practice the invention patented. It must be an account of a complete and operative invention. *Seymour v. Osborne*, 292.

PRIOR USE.

1. When, in a patent case, a person claims as an original inventor, and the defense is a prior invention by the defendant, if the defendant prove that the instrument which he alleges was invented by him was complete and capable of working, that it was known to at least five persons, and probably to many others, that it was put in use, tested, and successful, he brings the case within the established severe tests required by law to sustain the defense set up. *Coffin v. Ogden*, 465.
2. The invention or discovery relied upon as a defense must have been complete, and capable of producing the result sought to be accomplished; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him. If the thing were embryotic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view. The law requires no conjecture, but certainty. If the question relate to a machine, the conception must have been clothed in substantial forms, which demonstrate at once its practical efficacy and utility. *Ibid.*, 468.
3. The prior knowledge and use by a single person is sufficient. The number is immaterial. *Ibid.*
4. Until his work is done, the inventor has given nothing to the public. *Ibid.*
5. In *Gayler v. Wilder* the views of this court upon the subject were thus expressed: "We do not understand the Circuit Court to have said that the omission of Conner to try his safe by the proper tests would deprive it of its priority; nor his omission to bring it into public use. He might have omitted both, and also abandoned its use and been ignorant of the extent of its value; yet if it was the same with Fitzgerald's, the latter would not, upon such grounds, be entitled to a patent; provided Conner's safe and its mode of construction were still in the memory of Conner before they were recalled by Fitzgerald's patent." Whether the proposition expressed by the proviso in the last sentence is a sound one it is not necessary in this case to consider. *Ibid.*, 469.
6. A request which asks the court to charge that if a process patented was known to others more than two years before the plaintiff applied for his patent, the plaintiff's patent is void, is rightly refused. *Klein v. Russell*, 588.

See ABANDONMENT OF EXPERIMENTS; ABANDONMENT OF INVENTION; PRIOR PUBLICATION; PUBLIC USE.

PROCESS.

1. A process and the product of a process may be both new and patentable, and are wholly disconnected and independent of each other. *Rubber Co. v. Goodyear*, 237.
2. Patentable subjects, as defined by the patent law, are "any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter." A machine may be new, and the product or manufacture proceeding from it may be old. In that case the former would be patentable, the latter not. The machine may be substantially old and the product new. In that event the latter, and not the former, would be patentable. Both may be new, or both may be old. In the former case both would be patentable; in the latter neither. The same remarks apply to processes and their results. Patentability may exist as to either, neither, or both, according to the fact of novelty or the opposite. The patentability or the issuing of a patent as to one, in nowise affects the rights of the inventor or discoverer in respect to the other. They are wholly disconnected and independent facts. *Ibid.*, 243.
3. A patentee may obtain a patent for a combination or a process or for both. *Railroad Co. v. Dubois*, 340.
4. When a patent is for an entire process made up of several constituent steps or stages, the patentee not pretending to be the inventor of those constituents, his claim to the process as an entirety does not secure to him the exclusive use of the constituents singly. What is secured is their use when arranged in the process. *Mowry v. Whitney*, 410.

See ACCOUNT OF PROFITS, 10; CONSTRUCTION OF PATENT, 10; PARTICULAR PATENTS, 13; SPECIFICATION, 10.

PROFITS.

See ACCOUNT OF PROFITS.

PUBLICATION.

See PRIOR PUBLICATION.

PUBLIC USE.

1. According to the act of 1836, and the prior legislation of Congress, the public use or sale by the inventor of the thing invented, at any time before the application, was fatal to his claim for a patent. The act of 1839 relieved him from this consequence, and introduced a new and more liberal policy. It gave him the right to apply for a patent at any time, within two years after the use and sale of his invention, "except on proof of the abandonment of such invention to the public." The provision in the act of 1836, allowing the withdrawal of the application, was intended only to provide for the disposition in such cases of the duty which had been deposited, and to enable the applicant to resume a part of it upon the condition prescribed; it is silent as to everything beyond this. The new provision in the act of 1839 is wholly independent of the act of 1836; by necessary implication it repeals the conflicting provision upon the same subject in the earlier act. It must be examined by its own light, and so construed as to give the fullest effect to the beneficent purpose of the legislature. *Godfrey v. Eames*, 41.

See ABANDONMENT; EQUITY, 5; PRIOR PUBLICATION; PRIOR USE.

PUBLIC WORK.

See PRIOR PUBLICATION.

REDUCTION TO PRACTICE.

1. The inventor who first perfects a machine, and makes it capable of useful operation, is entitled to the patent. *Agawam Co. v. Jordan*, 187.

REDUCTION TO PRACTICE—*continued.*

2. He is the first inventor, and entitled to the patent, who, being an original discoverer, has first *perfected and adapted* the invention to actual use. *Ibid.* 201.
3. Crude and imperfect experiments do not confer a right to a patent. He is the first inventor who first perfects and adapts an invention to use. *Seymour v. Osborne*, 292.

REISSUE.

1. The surrender of a patent under the 13th section of the act of July 4, 1836, in judgment of law, extinguishes it—is a legal cancellation of it—and no right can afterwards be asserted upon it. *Moffit v. Garr*, 1.
2. Suits pending for an infringement of such patent fall with its surrender, because the foundation upon which they were commenced no longer exists. *Ibid.*
3. But moneys recovered or paid under a patent previous to its surrender cannot be recovered back afterwards. *Ibid.*
4. The practice of surrendering valid patents, and of granting reissues thereon in cases where the original patent was neither inoperative nor invalid, and where the specification was neither defective nor insufficient—the purpose being only to insert in the reissue expanded or equivocal claims—is declared by the court to be a great abuse of the privileges granted by the thirteenth section of the Patent Act of 1836, authorizing a surrender and reissue in certain cases, and is pointedly condemned. *Burr v. Durkee*, 69.
5. Previous to the Patent Act of 1836, which established a board or bureau composed of competent examiners, patents had frequently been adjudged invalid from the insufficiency of the specification; usually because, by inadvertency, accident, or mistake, the patentee had not sufficiently separated the old from the new, and had claimed more than he was entitled to. Few inventors, or even learned lawyers, were capable of correcting and clearly setting forth in a specification the proper limits of the just claim of the invention. The thirteenth section was intended to remedy this evil, by permitting the patentee to surrender his defective patent, and have it renewed in proper form, “*whenever it shall be inoperative or invalid, by reason of a defective or insufficient description or specification*, or by reason of the patentee claiming in his specification as his own invention more than he had a right to claim as new, if the error has arisen by inadvertency, accident, or mistake, &c. Since the date of this act, not only the Patent Office but the bar can furnish gentlemen fully competent to the task of drawing up proper specifications, and but little liable to commit blunders from inadvertency. Nevertheless, this privilege of surrender and reissue is resorted to more frequently than ever. *Ibid.* 104.
6. The practice of reissuing patents for the purpose of interpolating abstract generalizations, so as to cover subsequent inventions made by others, is condemned. *Ibid.*
7. A reissue in judgment of law is only a continuation of the original patent; and consequently the rights of the patentee, except as to prior infringements, are to be ascertained by the law under which the original application was made. *Read v. Bowman*, 140.
8. When an applicant for a reissue of a patent has done all in his power to make his application effectual—has filed his application with the Acting Commissioner and paid the requisite amount of fees—the application is to be considered as properly before the Commissioner. *Commissioner of Patents v. Whiteley*, 145.
9. Where a statute directed the Commissioner of Patents to grant a reissue of patents in certain cases, to “assignees,” it is the duty of the Commissioner to decide whether the applicant is an assignee with such an interest as entitled him to a reissue within the meaning of the statutory provision on the subject; and if he has thoroughly examined and decided that the applicant is not so, a

REISSUE—*continued.*

mandamus will not lie commanding him to refer the application to "the proper examiner, or otherwise examine or cause the same to be examined according to law." The preliminary question was within the scope of his authority. If the *mandamus* had ordered the Commissioner to allow an appeal, the order under which it issued would have been held correct. *Ibid.*

10. *Semble*, that an applicant for a reissue of a patent under the thirteenth section of the Patent Act of 1836, which allows a reissue in certain cases to a patentee, "and in case of his death or any assignment by him made of the original patent," vests a similar right "in his executors, administrators, or assignees," must be an assignee of the whole interest in the patent; and not the assignee of a sectional interest only. At least where the Commissioner of Patents had thus decided, this court, on the questions being raised in connection with other questions, whose decision rendered a decision on it unnecessary, say that "as at present advised they were not prepared to say that the decision of the Commissioner was not correct." *Ibid.*
11. Where a limitation of a claim, as found in a patent, has been caused by a mistake of the Commissioner of Patents in supposing that prior inventions would be covered, if the claim was made, as the applicant makes it, more broad, and an inventor has thus been made to take a patent with a claim narrower than his invention, it is the right, and, as it would seem, the duty of the Commissioner, upon being satisfied of his mistake, as to the nature of the prior inventions, to grant a reissue with an amended specification and a broader claim. *Morey v. Lockwood*, 210.
12. Where the amended specifications and broader claim secures the patentee only the same invention that he had originally described and claimed, the reissue is valid. *Ibid.*
13. A patentee or his representative in a reissue may enlarge or restrict the claim, so as to give it validity and secure the invention. *Rubber Company v. Goodyear*, 237.
14. The act of the Commissioner in accepting a surrender and granting a reissue is final and conclusive, and not re-examinable in a suit in the Circuit Court, unless it is apparent upon the face of the patent that he has exceeded his authority, or that there is such a repugnancy between the old and the new patent that it must be held as a matter of *legal construction* that the new patent is not for the same invention as that embraced and secured in the original patent. *Seymour v. Osborne*, 291.
15. Interpolations in a reissued patent of new features or ingredients or devices, which were neither described, suggested, nor substantially indicated in the original specifications, drawings, or Patent Office model, are not allowed. *Ibid.*
16. Parol testimony as to the scope of an original invention is not allowable on an application for a reissue as the basis of interpolation of new matter. *Ibid.*
17. The identity of invention in the original and reissued patent in such suits is a question of comparison of the two instruments to be made by the court, aided or not by the testimony of experts, as it may or may not appear that one or both may contain technical terms requiring the assistance of such persons in defining them. *Ibid.*
18. To raise such a question, the defendant in a patent suit must introduce the original patent. *Ibid.*
19. Under the act of Congress allowing reissues in divisions, it may require the use of several reissues to constitute a complete machine, and on a proceeding for infringement these may be introduced in one bill. *Ibid.*, 292.
20. The patentee in a reissue may redescribe his invention, and include in the description and claims of the patent not only what was well described before, but whatever else was suggested or substantially indicated in the specification or

REISSUE—*continued.*

- drawings which properly belonged to the invention as actually made and perfected. *Ibid.*, 313.
21. Prior to the decision of this court that a person sued as an infringer cannot abrogate a reissued or extended patent by showing that the Commissioner had been induced to grant it by fraudulent representations, it had sometimes been supposed that every such new patent was open to that defense; but since it has been determined that such a party cannot be heard to make such a defense to the charge of infringement, it has come to be regarded as the better opinion that all matters of fact involved in the hearing of an application to reissue a patent, and in granting it, are conclusively settled by the decision of the Commissioner granting the application. Matters of construction arising upon the face of the instrument are still open, but all matters of fact connected with the surrender and reissue are closed in such a suit by the decision of the Commissioner in granting the reissued patent. *Ibid.*, 314.
22. General claims inserted in a reissued patent will be carefully scrutinized, and will not be permitted to extend the rights of the patentee beyond what is shown by the history of the art to have been really his invention. If made to embrace more, the claim will be void. *Carlton v. Bokee*, 456.
23. Ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated, by its wide generalizations and ambiguous language, to discourage further invention in the same department of industry, and to cover antecedent inventions, condemned. *Ibid.*, 463.
24. A reissue is *prima facie* to be presumed to be for the same invention as is the original patent. *Klein v. Russell*, 587.

See APPLICATION, 8; ASSIGNMENT, 7; CONSTRUCTION OF PATENT; DAMAGES, 4; EVIDENCE, 4; REPEAL OF PATENT, 4.

REPEAL AND ABROGATION OF LETTERS PATENT.

1. The fifth section of the act of 1790 provided for the repeal of patents under the circumstances and in the manner specified. This act was repealed by the act of 1793. The tenth section of that act re-enacted the fifth section of the act of 1790. The fifth section of the latter act authorized substantially the same defenses in suits upon patents which are allowed by the fifteenth section of the act of 1836, with the further provision that if the facts touching either defense were established "judgment shall be rendered for the defendant with costs, and the patent shall be declared void." This act continued in force until it was repealed by the act of 1836. These provisions were not then, and they have not since been, re-enacted. The sixteenth section of the act of 1836 authorizes a court of equity, in cases of interference, to take jurisdiction and annul the patent issued to the party in the wrong. Beyond this the patent laws are silent upon the subject of the exercise of such authority. This review furnishes a strong implication that it was the intention of Congress not to allow a patent to be abrogated in any collateral proceeding, except in the particular instance mentioned, but to leave the remedy in all other cases to be regulated by the principles of general jurisprudence. *Rubber Company v. Goodyear*, 243.
2. *Jackson v. Lawton*, 10 Johnson, 23, cited and approved that "unless letters patent are absolutely void on the face of them, or the issuing of them was without authority or was prohibited by statute, they can only be avoided by a regular course of pleading, in which the fraud, irregularity, and mistake is regularly put in issue." *Ibid.*, 244.
3. A patent from the government cannot be impeached for fraud in procuring its issue in any other mode than by a direct proceeding to set it aside. But it may be shown in a suit on a reissued patent that it covers matter not part of the original invention. *Eureka Company v. Bailey Company*, 287.

REPEAL AND ABROGATION OF LETTERS PATENT—*continued.*

4. Neither reissued nor extended patents can be abrogated by an infringer in a suit against him for infringement, upon the ground that the letters patent were procured by fraud in prosecuting the application for the same before the Commissioner. *Seymour v. Osborne*, 291.
5. The ancient mode of annulling or repealing the king's patent was by *scire facias*, generally brought in chancery, where the record of the instrument was found. *Mowry v. Whitney*, 382.
6. In modern times the court of chancery, sitting in equity, entertained a similar jurisdiction by bill when the ground of relief is fraud in obtaining the patent, and in this country it is the usual mode in all cases, because better adapted to the investigation and to the relief to be administered. *Ibid.*
7. But *scire facias* could only be sued out in the English courts by the king or his attorney general, except in cases where two patents had been granted for the same thing to different individuals; and the sixteenth section of the act of July 4th, 1836, concerning patents for inventions, is based upon analogous principles. *Ibid.*
8. Both upon this authority and upon sound principle no suit can be brought to set aside, annul, or declare void, a patent issued by the government, except in the class of cases above mentioned, unless brought in the name of the government or by the authority or permission of the Attorney General, so as to be under his control. *Ibid.*
9. If an individual finds himself injured, either specially or as a part of the general public, it is no hardship to require him to satisfy the Attorney General that the case is one in which the government ought to interfere. *Ibid.*, 388.

See EXTENSION, 2, 4; INFRINGEMENT, 7.

REVIEW, BILL OF.

See BILL OF REVIEW.

RULES OF COURT.

Rules of court are indispensable to the dispatch of business and the orderly administration of justice, and it must be presumed that the court below is familiar with the construction and course of practice under them. *Packet Company v. Sickles*, 616.

SALE.

See ASSIGNMENT; AGREEMENT; DEED.

SPECIFICATION.

1. The court say of the claim of Wells, which was in the following language, "What is claimed herein as the invention of Wells is forming hats of fur fibres by throwing the fur in properly regulated quantities substantially as herein described." Here we have the first experiment in the art of expansion by an equivocal claim, which may be construed a claim for the result or product of the machine or for its principle or mode of operation. By this construction another inventor may be frightened from the course. But when challenged in a court of justice as too broad, the words "substantially as herein described," may be resorted to as qualifying this claim of a function, result, or principle, and arguing that, as the specification described a machine, it meant nothing more. *Burr v. Duryee*, 99.
2. When a patent is claimed for a discovery of a new substance by means of chemical combinations of known materials, it should state the component parts of the new manufacture claimed, with clearness and precision, and not leave the person attempting to use the discovery to find it out by "experiment." *Tyler v. Boston*, 177.
3. When the art is new, persons cannot be presumed to be skilled in it and to anti-

SPECIFICATION—continued.

- cipate the result of chemical combinations of elements not in daily use. *Ibid.*, 180.
4. Where an invention does not embrace an entire machine, the part should be specified and pointed out, as *e.g.*, the coulter of a plough, or the divider or sweep-rake of a reaping machine, so that another party may construct the plough or reaping machine, provided he does not use the part specified. *Seymour v. Osborne*, 291.
 5. A claim which might otherwise be held to be bad as covering a function or result, when containing the words "substantially as described," must be construed in connection with the specification and be limited thereby; and when so construed it may be held valid. The claims in this case, when so construed, were so held. *Ibid.*
 6. The statute requirements concerning the specification may be regarded as conditions precedent to the right of the Commissioner to grant the application, as they must appear on the face of the letters patent, and are always open to legal construction as to their sufficiency. *Ibid.*, 310.
 7. Patented inventions are made which embrace both a new ingredient and a new combination of old ingredients embodied in the same machine. Particularity of description is required in such a case, as the property of the patentee consists, not only in the new ingredient, but also in the new combination, and it is essential that his invention shall be so fully described that others may not be led into mistake, as no other person can lawfully use a machine containing such new ingredient or such new combination. *Ibid.*, 311.
 8. A new combination of old ingredients is sufficiently described if the ingredients of which it is composed are named, their mode of operation given, and the new and useful result to be accomplished pointed out, so that those skilled in the art and the public may know the extent and nature of the claim, and what the parts are which co-operate to produce the described new and useful result. *Ibid.*, 312.
 9. Where the claim immediately follows the description of the invention it may be construed in connection with the explanations contained in the specifications, and where it contains words referring back to the specification it cannot properly be construed in any other way. *Ibid.*
 10. Where only vague and uncertain directions could be given as to the degree of foreign heat to be applied in any particular case, there, when a patentee in his specification establishes a *maximum* and a *minimum*, the ascertainment of the proper intermediate degree may be left to the skill and judgment of the operator practicing the process. *Mowry v. Whitney*, 410.
 11. The specification is to be addressed to those skilled in the art, and is to be comprehensible by them. It may be sufficient, though the unskilled may not be able to gather from it how to use the invention. *Ibid.*, 429.
 12. The definiteness of a specification must vary with the nature of its subject. Addressed as it is to those skilled in the art, it may leave something to their skill in applying the invention, but it should not mislead them. *Ibid.*, 430.
 13. It would be most unreasonable to read the directions of the specification without reference to the object which they profess to have in view. *Ibid.*, 645.
 14. Patentable inventions may consist entirely in a new combination of old ingredients whereby a new and useful result is obtained, and in such cases the description of the invention is sufficient if the ingredients are named, the mode of operation given, and the new and useful result is pointed out, so that those skilled in the art and the public may know the nature and extent of the claim, and what the parts are which co-operate to produce the described new and useful result. *Gould v. Rees*, 439.
 15. Where a claim in a patent uses general terms of reference to the specification, such

SPECIFICATION—*continued.*

- as "substantially in the manner and for the purpose herein set forth," although the patentee will not be held to the precise combination of all the parts described, yet his claim will be limited, by reference to the history of the art, to what was really first invented by him. *Carlton v. Bokee*, 456.
16. One void claim, if made by inadvertence and in good faith, will not vitiate the entire patent. *Ibid.*
 17. Where a specification, by ambiguity and needless multiplication of nebulous claims, is calculated to mislead and deceive the public, the patent is void. *Ibid.*
 18. The claim of the patentee must be limited to the specific method or means of applying highly heated water under pressure pointed out in the specification; and although the claim is on its face broader than this, yet it is to be construed by reference to the specification. *Mitchell v. Tilghman*, 476.
 19. In this point of view it is unimportant whether the claim contained any direct reference to the specification or not. Such reference, where not expressed, will be implied. *Ibid.*
 20. Usually the claim contains the words "as described," or "substantially as described," or words of like import, which are everywhere understood as referring back to the descriptive parts of the specification. Words of such import, if not expressed in the claim, must be implied, else the patent in many cases would be invalid, as covering a mere function, principle, or result; which is obviously forbidden by the patent law, as it would close the door to all subsequent improvements. *Ibid.*, 556.
 21. Doubtless the invention may be good, though the subject of it consists in the discovery of some principle of science or property of matter never before known or used, by which some new and useful result is obtained, and such an invention or discovery may be the subject of a valid patent without including in the claim any new arrangement of machinery to accomplish the object, provided the inventor describes, as required in the patent law, the method, process, or means of applying the invention to practical use, and of obtaining the described new and useful result. *Ibid.*
 22. It has always been held that a patent embraces nothing more than the improvement described and claimed as new, and that any one who afterwards discovers a method of accomplishing the same object, substantially and essentially differing from the one described, has a right to use it and vend it to others to be used. *Ibid.*
 23. The specification must be correct, as it is settled law that the patent is void if the described result cannot be obtained by the described means. *Ibid.*
 24. A claim for a compound is not void because the specification does not prescribe exact and unvarying proportions in the ingredients of the compound; some of the ingredients, being, *ex. gr.*, coloring matter, which the specification says may "be omitted or modified," as desired. *Klein v. Russell*, 587.

See CHARGE OF JUDGE, 2, 4; COMBINATION, 7; CONSTRUCTION OF PATENT; CONSTRUCTION OF STATUTE, 1; PRINCIPLE, 1, 2; REISSUE, 6.

STAMP.

See ACCOUNT OF PROFITS, 2,

STATUTE OF FRAUDS.

- 1 Where the record of a former suit is offered in evidence, the declaration setting out a special contract, but not saying whether it was written or parol, and where jurors who were impaneled in the former suit are brought to testify that the contract declared on in the second suit was the same contract that was in controversy in the former one, and was passed on by them, testimony may be given on the other side that the contract was a parol one; so as to let in a defense of the statute of frauds. *Packet Co. v. Sickles*, 155.

STATUTE OF FRAUDS—*continued.*

2. A contract where performance is to run through a term of years, but which, by its tenor, may be defeated at any time before the expiration of the term—*ex. gr.*, a contract to pay for a right to use an invention, on a certain boat, so much a year during the term of a patent having twelve years yet to run, “if the said boat should so long last,” is within the clause of the British statute of frauds, in force in the District of Columbia, providing that “no suit shall be brought to charge any person upon any agreement that was not to be performed in one year, unless there was some memorandum or note in writing of the agreement.” *Ibid.*, 155,

SUBJECT-MATTER OF PATENTS.

Semble, that an improvement in the plan of constructing a jail is not a subject of patent within the Patent Acts of 1836 or 1842. *Jacobs v. Baker*, 174.

SUBSTITUTION OF MATERIAL.

1. The mere change in an instrument or machine of one material into another—as of wood, or of wood strengthened with iron, into iron alone—is not “invention” in the sense of the Patent Acts, and therefore is not the subject of a patent; the purpose and means of accomplishment, and form and mode of operation of each instrument—the new as of the old—being each and all the same. The mere fact that the new instrument is a better one than the old one—requiring less repair, and having greater solidity than the old one, does not alter the case. It does not bring the case out of the category of more or less excellence of construction. *Hicks v. Kelsey*, 472.
2. In *Crane v. Price*, Webster’s Patent Cases, it is true, the use of anthracite instead of bituminous coal with a hot-blast in smelting iron ore was held to be a good invention, inasmuch as it produced a better article of iron at a less expense. But that was a process of manufacture, and in such process a different article replacing another article in the combination often produces different results. The latter case is more analogous to the cases of compositions of matter than it is to those of machinery; and in compositions of matter a different ingredient changes the identity of the compound, whereas an iron bar in the place of a wooden one, and subserving the same purpose, does not change the identity of the machine. *Ibid.*, 475.

See COMBINATION; EQUIVALENT.

SUGGESTIONS.

1. Where a master workman, employing other people in his service, has conceived the plan of an invention and is engaged in experiments to perfect it, no suggestions from a person employed by him, not amounting to a new method or arrangement which in itself is a complete invention, is sufficient to deprive the employer of the exclusive property in the perfected improvement. *Agawam Co. v. Jordan*, 187.
2. No one is entitled to a patent for that which he did not invent, unless he can show a legal title to the same from the inventor, or by operation of law; but where a person has discovered an improved principle in a machine, manufacture, or composition of matter, and employs other persons to assist him in carrying out that principle, and they, in the course of experiments arising from that employment, make valuable discoveries ancillary to the plan and preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle, and may be embodied in his patent as part of his invention. *Agawam Company v. Jordan*, 201.
3. Suggestions from another made during the progress of such experiments, in order that they may be sufficient to defeat a patent subsequently issued, must have

SUGGESTIONS—*continued.*

embraced the plan of the improvement, and must have furnished such information to the person to whom the communication was made that it would have enabled an ordinary mechanic, without the exercise of any ingenuity and special skill on his part, to construct and put the improvement in successful operation. *Ibid.*, 202.

4. Persons employed, as much as employers, are entitled to their own independent inventions; but where the employer has conceived the plan of an invention, and is engaged in experiments to perfect it, no suggestions from an employee, not amounting to a new method or arrangement, which in itself is a complete invention, is sufficient to deprive the employer of the exclusive property in the perfected improvement. But where the suggestions go to make up a complete and perfect machine, embracing the substance of all that is embodied in the patent subsequently issued to the party to whom the suggestions were made, the patent is invalid because the real invention or discovery belonged to another. *Ibid.*

TRADE MARK.

1. To entitle a name to equitable protection as a trade mark, the right to its use must be exclusive, and not one which others may employ with as much truth as those who use it; and this is so although the use by a second producer, in describing truthfully his product, of a name or a combination of words already in use by another, may have the effect of causing the public to mistake as to the origin or ownership of the product. Purchasers, though mistaken, are not in such a case deceived by false representations, and equity will not enjoin against telling the truth. *Canal Company v. Clark*, 352.
2. Hence no one can apply the name of a district or country to a well-known article of commerce, and obtain thereby such an exclusive right to the application as to prevent others inhabiting the district, or dealing in similar articles coming from the district, from truthfully using the same designation. *Ibid.*
3. Accordingly, where the coal of one person who early and long mined coal in a valley of Pennsylvania known as the Lackawanna valley had been designated and become known as "Lackawanna coal;" *Held*, that miners who came in afterwards and mined in another part of the same valley, could not be enjoined against calling their coal "Lackawanna coal," it being in fact in its generic character properly so designated, although more properly described when specifically spoken of as "Scranton coal" or "Pittston coal," and when specifically spoken of usually so called. *Ibid.*, 353.
4. Property in a trade mark, or rather in the use of a trade mark or name, has very little analogy to that which exists in copyrights, or in patents for inventions. Words in common use, with some exceptions, may be adopted, if at the time of their adoption they were not employed to designate the same or like articles of production. *Ibid.*, 361.
5. The office of a trade mark is to point out distinctly the origin or ownership of the article to which it is affixed—or, in other words, to give notice who was the producer. This may in many cases be done by a name, a mark, or a device well known but not previously applied to the same article. *Ibid.*
6. The trade mark must, either by itself or by association, point distinctly to the origin or ownership of the article to which it is applied. *Ibid.*
7. No one can claim protection for the exclusive use of a trade mark or trade name which would practically give him a monopoly in the sale of any goods other than those produced or made by himself. If he could, the public would be injured rather than protected, for competition would be destroyed. *Ibid.*, 362.
8. Nor can a generic name, or a name merely descriptive of an article of trade, of its qualities, ingredients, or characteristics, be employed as a trade-mark, and the exclusive use of it be entitled to legal protection. *Ibid.*

TRADE MARK—continued.

9. The same reasons which forbid the exclusive appropriation of generic names, or of those merely descriptive of the article manufactured, and which can be employed with truth by other manufacturers, apply with equal force to the appropriation of geographical names designating districts of country. *Ibid.*
10. The cases of *Brooklyn White Lead Company v. Masury*, *Alvord v. Newman*, *McAndrews v. Bassett*, and *Seizo v. Proverende* commented on and distinguished. *Ibid.*, 363, 364.

TRUSTEE.

See **ADMINISTRATOR**, 3.

USE OF PATENTED INVENTIONS BY THE UNITED STATES.

If an officer in the military service, not specially employed to make experiments with a view to suggest improvements, devises a new and valuable improvement in arms, tents, or any other kind of war material, he is entitled to the benefit of it, and to letters patent for the improvement from the United States, equally with any other citizen not engaged in such service; and the government cannot, after the patent is issued, make use of the improvement, any more than a private individual, without license of the inventor or making compensation to him. *United States v. Burns*, 349.

See **AGREEMENT**, 8, 9, 10.

UTILITY.

1. Utility in the sense of the Patent Law does not require such general utility as to supersede all other inventions that can accomplish the same object. *Seymour v. Osborne*, 292.
2. Utility in most cases is a question of fact, as it usually depends upon the evidence resulting from actual experiment. *Mitchell v. Tilghman*, 476.
3. The utility of an invention may be impeached when it appears that it is not capable of being used to effect the object proposed. *Ibid.*
4. An invention which constantly exposes the operator to the loss of his life or to great bodily harm cannot be regarded as useful within the meaning of the Patent Law. *Ibid.*

See **DESIGN**, 2, 3.

WITHDRAWN APPLICATION.

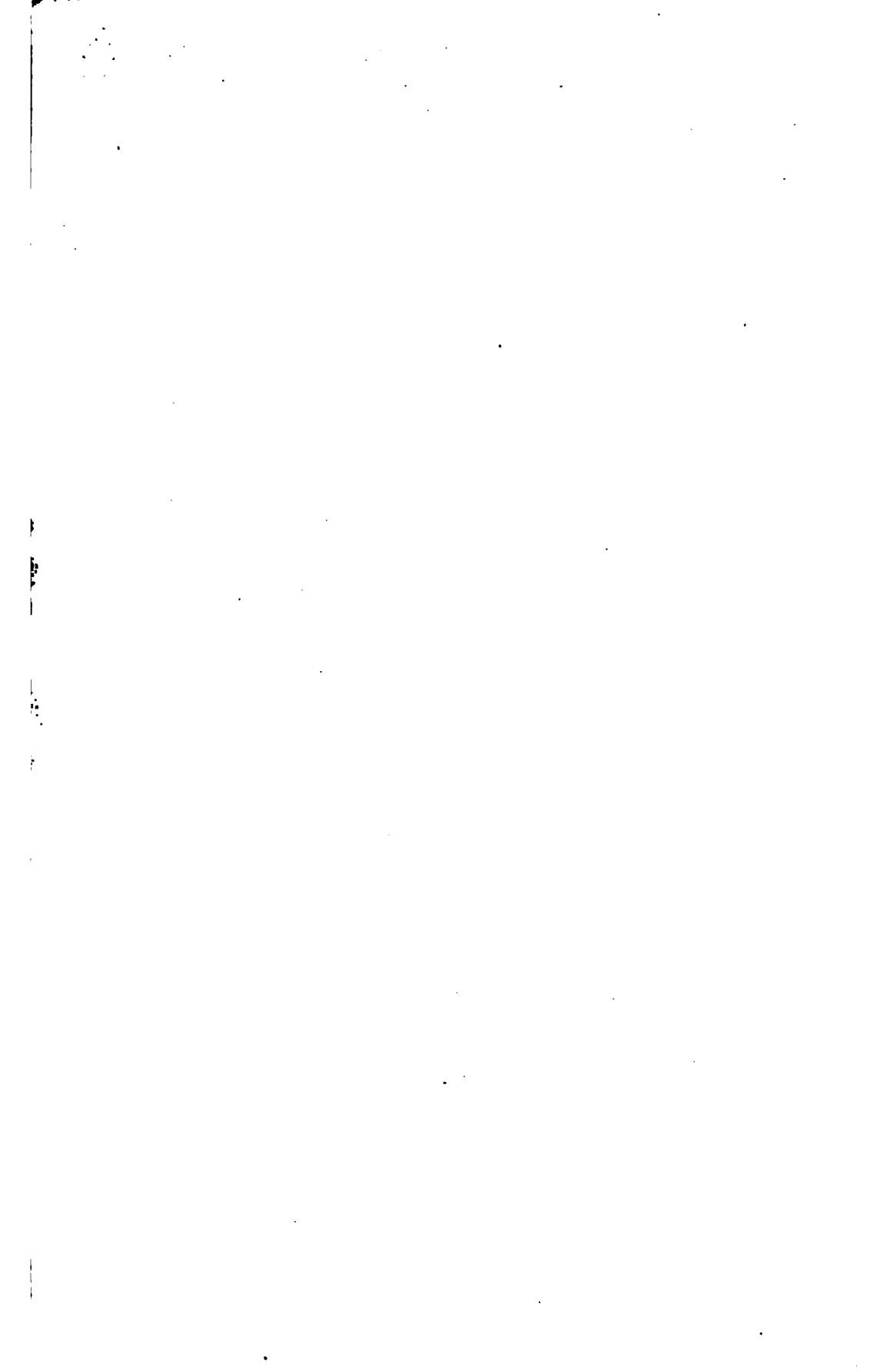
See **APPLICATION**, 1.

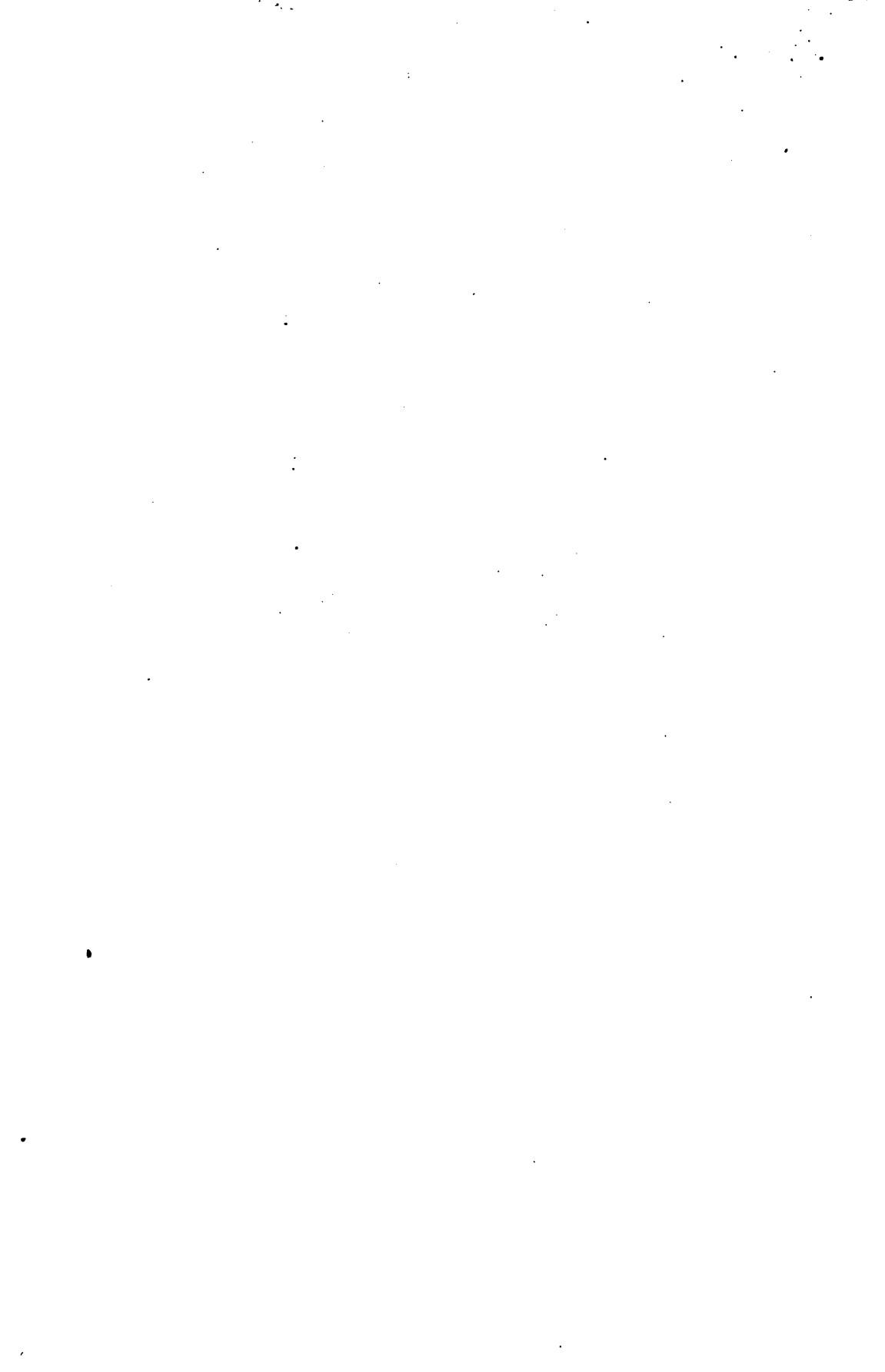
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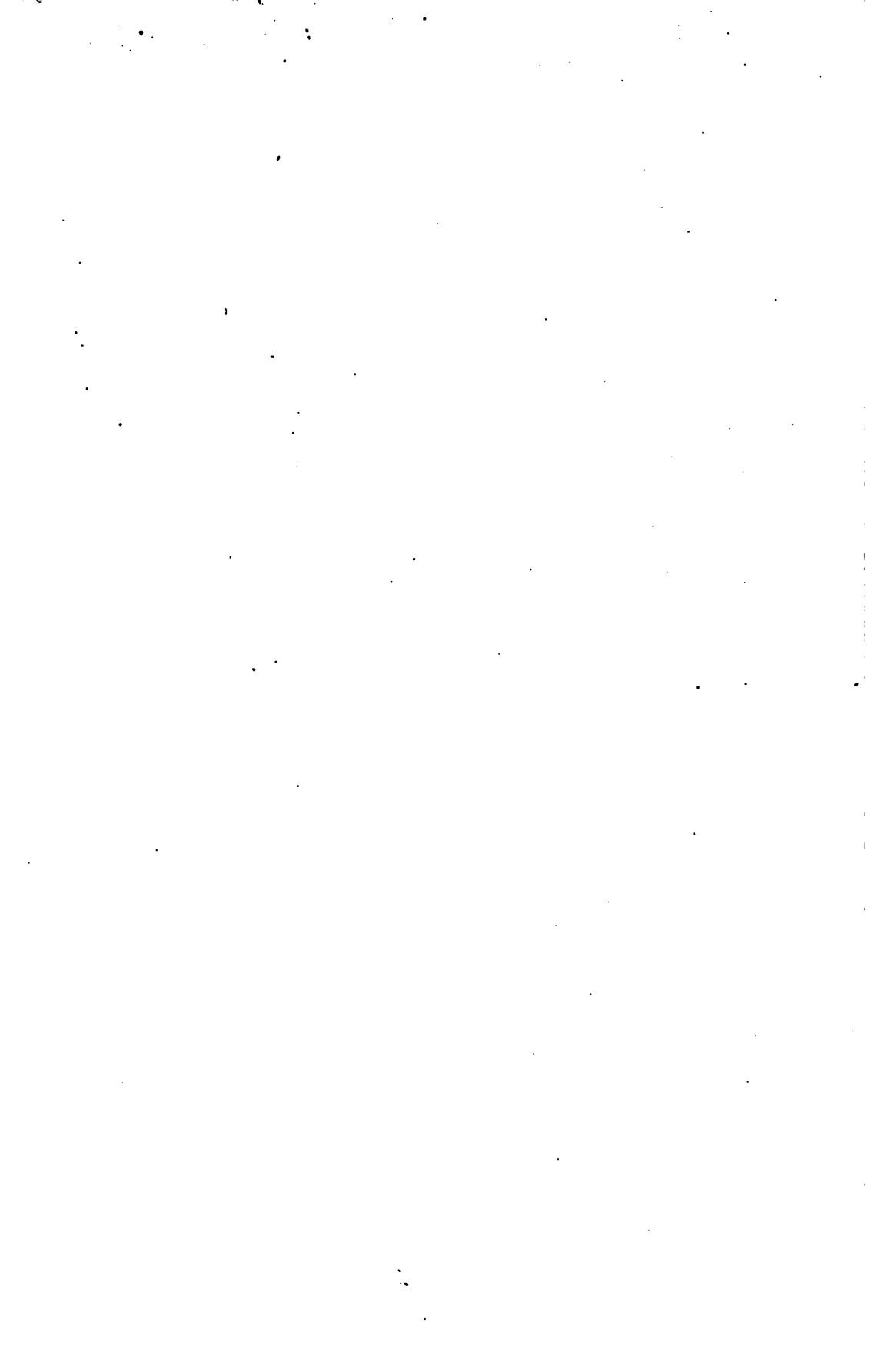
See **EVIDENCE**.

WRIT OF ERROR.

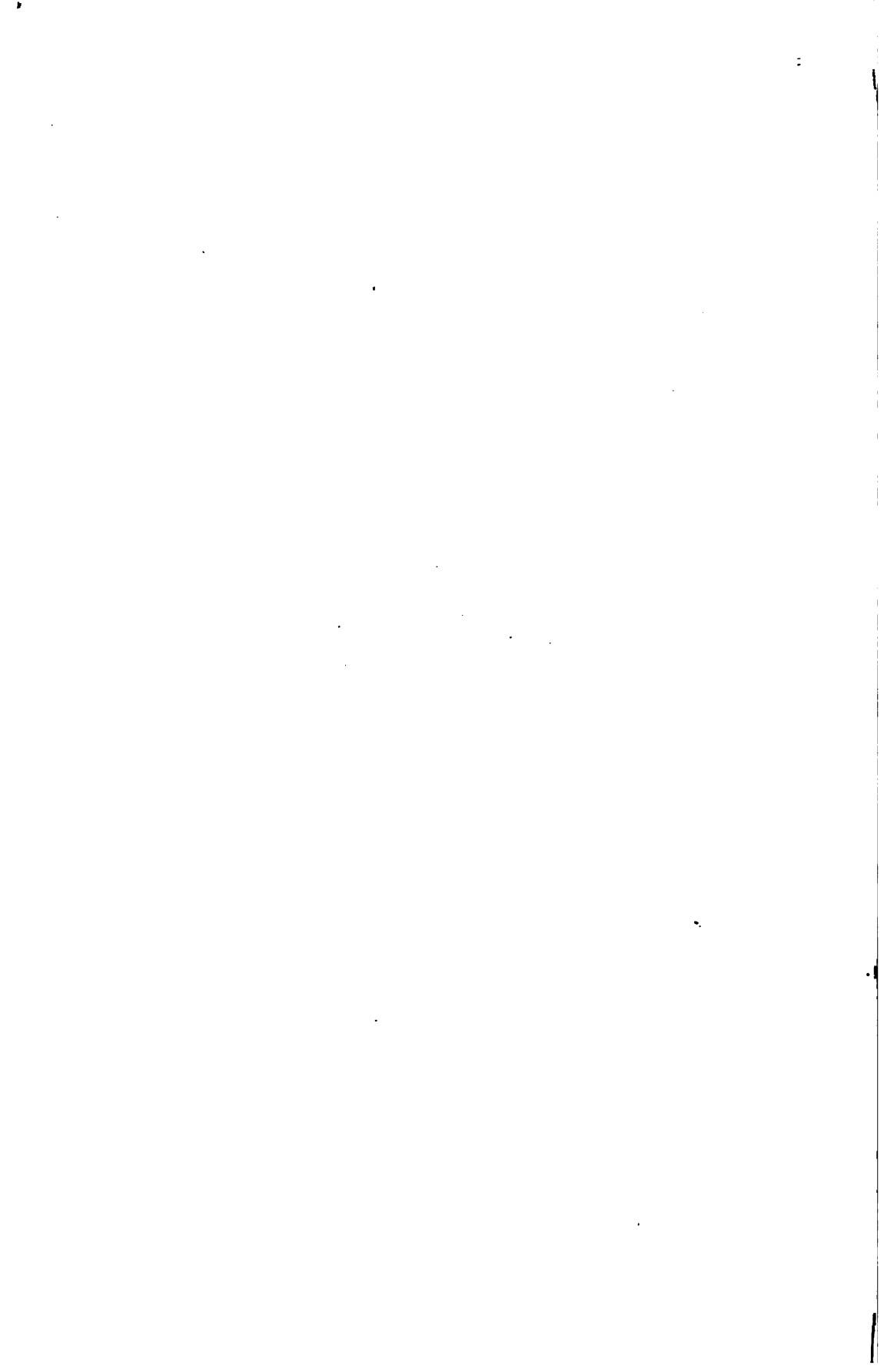
See **APPEAL; ASSIGNMENT OF ERRORS**.











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